

G1000® Integrated Flight Deck

Cockpit Reference Guide for the Cessna CitationJet Model 525



GARMIN®

FLIGHT INSTRUMENTS

EIS

NAV/COM/TRANSPONDER/AUDIO PANEL

AUTOMATIC FLIGHT CONTROL SYSTEM

GPS NAVIGATION

FLIGHT PLANNING

PROCEDURES

HAZARD AVOIDANCE

ADDITIONAL FEATURES

ABNORMAL OPERATION

ANNUNCIATIONS & ALERTS

APPENDIX

INDEX

This manual reflects the operation of System Software version 1162.00 or later for the Cessna CitationJet Model 525. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

Garmin International, Inc., 1200 East 151st Street, Olathe, Kansas 66062, U.S.A.
Tel: 913/397.8200 Fax: 913/397.8282

Garmin AT, Inc., 2345 Turner Road SE, Salem, OR 97302, U.S.A.
Tel: 503/391.3411 Fax 503/364.2138

Garmin (Europe) Ltd, Liberty House, Bulls Copse Road, Hounslow Business Park,
Southampton, SO40 9RB, U.K.
Tel: 44/0870.8501241 Fax: 44/0870.8501251

Garmin Corporation, No. 68, Jangshu 2nd Road, Shijr, Taipei County, Taiwan
Tel: 886/02.2642.9199 Fax: 886/02.2642.9099

For after-hours emergency, aircraft on ground (AOG) technical support for Garmin panel mount and integrated avionics systems, please contact Garmin's AOG Hotline at 913.397.0836.

Web Site Address: www.garmin.com

Except as expressly provided herein, no part of this manual may be reproduced, copied, transmitted, disseminated, downloaded or stored in any storage medium, for any purpose without the express written permission of Garmin. Garmin hereby grants permission to download a single copy of this manual and of any revision to this manual onto a hard drive or other electronic storage medium to be viewed for personal use, provided that such electronic or printed copy of this manual or revision must contain the complete text of this copyright notice and provided further that any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

Garmin® is a registered trademark of Garmin Ltd. or its subsidiaries. WATCH®, FliteCharts®, and SafeTaxi® are trademarks of Garmin Ltd. or its subsidiaries. These trademarks may not be used without the express permission of Garmin.

NavData® is a registered trademark of Jeppesen, Inc.; and XM® is a registered trademark of XM Satellite Radio, Inc.; Honeywell® and Bendix/King® are registered trademarks of Honeywell International, Inc.; CO Guardian is a trademark of CO Guardian, Inc.



WARNING: Navigation and terrain separation must NOT be predicated upon the use of the terrain avoidance feature. The terrain avoidance feature is NOT intended to be used as a primary reference for terrain avoidance and does not relieve the pilot from the responsibility of being aware of surroundings during flight. The terrain avoidance feature is only to be used as an aid for terrain avoidance. Terrain data is obtained from third party sources. Garmin is not able to independently verify the accuracy of the terrain data.



WARNING: The displayed minimum safe altitudes (MSAs) are only advisory in nature and should not be relied upon as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.



WARNING: The altitude calculated by the GPS receivers is geometric height above Mean Sea Level and could vary significantly from the altitude displayed by pressure altimeters, such as the GDC 74B Air Data Computer, or other altimeters in the aircraft. GPS altitude should never be used for vertical navigation. Always use pressure altitude displayed by the PFD or other pressure altimeters in aircraft.



WARNING: Do not use outdated database information. Databases used in the system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk.



WARNING: Do not use basemap (land and water data) information for primary navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered as an aid to enhance situational awareness.



WARNING: Traffic information shown on system displays is provided as an aid in visually acquiring traffic. Pilots must maneuver the aircraft based upon TCAS II Resolution Advisories (if installed), ATC guidance, or positive visual acquisition of conflicting traffic.



WARNING: XM Weather should not be used for hazardous weather penetration. Weather information provided by the GDL 69A is approved only for weather avoidance, not penetration.



WARNING: NEXRAD weather data is to be used for long-range planning purposes only. Due to inherent delays in data transmission and the relative age of the data, NEXRAD weather data should not be used for short-range weather avoidance.



WARNING: The G1000 Integrated Flight Deck, as installed in the Cessna CitationJet Model 525 aircraft, has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without a fault indication shown by the system. It is thus the responsibility of the pilot to detect such an occurrence by means of cross-checking with all redundant or correlated information available in the cockpit.



WARNING: For safety reasons, system operational procedures must be learned on the ground.



WARNING: The United States government operates the Global Positioning System and is solely responsible for its accuracy and maintenance. The GPS system is subject to changes which could affect the accuracy and performance of all GPS equipment. Portions of the system utilize GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the system can be misused or misinterpreted and, therefore, become unsafe.



WARNING: To reduce the risk of unsafe operation, carefully review and understand all aspects of the G1000 Pilot's Guide documentation and the Cessna CitationJet Model 525 Airplane Flight Manual. Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the system to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.



WARNING: The illustrations in this guide are only examples. Never use the system to attempt to penetrate a thunderstorm. Both the FAA Advisory Circular, Subject: Thunderstorms, and the Aeronautical Information Manual (AIM) recommend avoiding "by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo."



WARNING: Lamp(s) inside this product may contain mercury (HG) and must be recycled or disposed of according to local, state, or federal laws. For more information, refer to our website at www.garmin.com/aboutGarmin/environment/disposal.jsp.



WARNING: Because of variation in the earth's magnetic field, operating the system within the following areas could result in loss of reliable attitude and heading indications. North of 72° North latitude at all longitudes. South of 70° South latitude at all longitudes. North of 65° North latitude between longitude 75° W and 120° W. (Northern Canada). North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada). North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia). South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).



WARNING: Do not use GPS to navigate to any active waypoint identified as a 'NON WGS84 WPT' by a system message. 'NON WGS84 WPT' waypoints are derived from an unknown map reference datum that may be incompatible with the map reference datum used by GPS (known as WGS84) and may be positioned in error as displayed.



CAUTION: The PFD and MFD displays use a lens coated with a special anti-reflective coating that is very sensitive to skin oils, waxes, and abrasive cleaners. **CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING.** It is very important to clean the lens using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings.



CAUTION: The system does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.



NOTE: All visual depictions contained within this document, including screen images of the panel and displays, are subject to change and may not reflect the most current system and databases. Depictions of equipment may differ slightly from the actual equipment.



NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



NOTE: The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.



NOTE: This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at www.garmin.com/prop65.



NOTE: Interference from GPS repeaters operating inside nearby hangars can cause an intermittent loss of attitude and heading displays while the aircraft is on the ground. Moving the aircraft more than 100 yards away from the source of the interference should alleviate the condition.



NOTE: Use of polarized eyewear may cause the flight displays to appear dim or blank.



NOTE: The purpose of this Cockpit Reference Guide is to provide the pilot a resource with which to find operating instructions on the major features of the G1000 system more easily. It is not intended to be a comprehensive operating guide. Complete operating procedures for the system are found in the G1000 Integrated Flight Deck Pilot's Guide.

Blank Page

Part Number	Change Summary
190-01130-00	Initial release

Revision	Date of Revision	Affected Pages	Description
A	May, 2010	All	Production release

Blank Page

FLIGHT INSTRUMENTS	1
Selecting the Altimeter Barometric Pressure Setting	1
Selecting Standard Barometric Pressure	1
Change Altimeter Barometric Pressure Setting Units	1
Synchronizing the Altimeter Barometric Pressure Settings	1
Synchronize CDI	1
Change Navigation Sources	2
Enable/Disable OBS Mode While Navigating with GPS	2
Generic Timer	2
Configure Vspeed Bugs Individually	2
Turn Vspeed Bugs On or Off by Category	3
Set Barometric/Radar Altimeter (RA Optional) Minimum Descent Altitude	3
Displaying Wind Data	3
ENGINE INDICATION SYSTEM	5
Inter-Turbine Temperature	6
Ground OAT Set Window	7
Engine SPool Rotation Speeds (N1 and N2)	7
Target N1 Thrust Mode	8
NAV/COM/TRANSPONDER/AUDIO PANEL	11
Enter or Change Flight ID	11
ADF Tuning (Optional)	11
DME Tuning	11
Enter a Transponder Code	11
Select Transponder Mode	12
Selecting a COM Radio	12
Selecting a NAV Radio	12
NAV/COM Tuning	12
Intercom System (ICS) Isolation	13
Passenger Address (PA) System	13
Clearance Recorder and Player	14
AUTOMATIC FLIGHT CONTROL SYSTEM	15
Flight Director Activation	15
Vertical Modes	16
Lateral Modes	17
GPS NAVIGATION	19
Direct-to Navigation	19
Activate a Stored Flight Plan	20
Activate a Flight Plan Leg	20
Stop Navigating a Flight Plan	21
Vertical Navigation (VNAV)	21

FLIGHT PLANNING	23
Weight Planning	23
Trip Planning	23
Create a New User Waypoint Defined by Latitude & Longitude	25
Create a New User Waypoint Defined by Radials from Other Waypoints	26
Create a New User Waypoint Defined by a Radial & Distance from Another Waypoint	28
Delete a User Waypoint	29
Create a New Flight Plan	30
Import a Flight Plan from an SD Card	31
Insert a Waypoint in the Active Flight Plan	31
Enter an Airway in a Flight Plan	32
Invert An Active Flight Plan	33
Remove a Departure, Arrival, Approach, or Airway from a Flight Plan	33
Store a Flight Plan	34
Edit a Stored Flight Plan	34
Delete a Waypoint from the Flight Plan	34
Invert and Activate a Stored Flight Plan	35
Copy a Flight Plan	35
Delete a Flight Plan	35
Graphical Flight Plan Creation	36
Export a Flight Plan to an SD Card	36
PROCEDURES	37
Load and Activate a Departure Procedure	37
Activate A Departure Leg	37
Load An Arrival Procedure	37
Activate An Arrival Leg	38
Load and/or Activate an Approach Procedure	38
Activate An Approach in the Active Flight Plan	39
Activate a Vector to Final Approach Fix	39
Activate A Missed Approach in the Active Flight Plan	40
HAZARD AVOIDANCE	41
Customizing the Hazard Displays on the Navigation Map	41
STORMSCOPE® (Optional)	41
XM Weather (Subscription Optional)	43
Traffic Systems	44
Terrain Awareness & Warning System	46
Airborne Color Weather Radar	50

ADDITIONAL FEATURES	55
Synthetic Vision (Optional)	55
Terminal Procedure Charts	56
AOPA Airport Directory	58
Satellite Telephone Communication (Optional)	59
XM® Radio Entertainment (Subscription Optional)	61
ABNORMAL OPERATION	65
Reversionary Mode	65
Abnormal COM Operation	65
Audio Panel Fail-safe Operation	65
Hazard Displays with Loss of GPS Position	66
Unusual Attitudes	66
Dead Reckoning	67
ANNUNCIATIONS & ALERTS	69
Advisory Annunciations	69
Message Advisory Alerts	69
Comparator Annunciations	69
Reversionary Sensor Annunciations	70
TAWS-A Alerts	71
TAWS-B Alerts	74
Aural Alerts	75
AFCS ALERTS	76
Flight Plan Import/Export Messages	77
MFD & PFD Message Advisories	78
Database Message Advisories	79
GMA 1347D-20 Message Advisories	82
GIA 63W Message Advisories	83
GEA 71 Message Advisories	86
GTX 33/33D Message Advisories	86
GRS 77 Message Advisories	87
GMU 44 Message Advisories	89
GDL 59 Message Advisories	89
GSR 56 Message Advisories	90
GDL 69A Message Advisories	90
GWX 68 Alert Messages	90
GDC 74B Message Advisories	91
GCU 475 Message Advisories	91
GMC 710 Message Advisories	92
GTS 820 Message Advisories	92
Miscellaneous Message Advisories	93

APPENDIX 97

PFD Softkey Map 97

MFD Softkey Map 103

Database Updates 106

INDEX Index-1

FLIGHT INSTRUMENTS

SELECTING THE ALTIMETER BAROMETRIC PRESSURE SETTING

Turn the **BARO** Knob to select the desired setting.

SELECTING STANDARD BAROMETRIC PRESSURE

Press the **BARO** Knob.

CHANGE ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

- 1) Press the **PFD** Softkey to display the second-level softkeys.
- 2) Press the **ALT UNIT** Softkey.
- 3) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

Or:

Press the **HPA** Softkey to display the barometric pressure setting in hectopascals.

- 4) Press the **BACK** Softkey to return to the top-level softkeys.

SYNCHRONIZING THE ALTIMETER BAROMETRIC PRESSURE SETTINGS

- 1) Select the AUX-SYSTEM SETUP Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight BARO in the SYNCHRONIZATION Window.
- 4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

SYNCHRONIZE CDI

- 1) Select the AUX-SYSTEM SETUP Page on the MFD.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight CDI in SYNCHRONIZATION Window.
- 4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

CHANGE NAVIGATION SOURCES

- 1) Press the **CDI** Softkey to change from GPS to VOR1 or LOC1. This places the light blue tuning box over the NAV1 standby frequency in the upper left corner of the PFD.
- 2) Press the **CDI** Softkey again to change from VOR1 or LOC1 to VOR2 or LOC2. This places the light blue tuning box over the NAV2 standby frequency.
- 3) Press the **CDI** Softkey a third time to return to GPS.

ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH GPS

- 1) Press the **OBS** Softkey to select OBS Mode.
- 2) Turn the **CRS** Knob to select the desired course to/from the waypoint. Press the **CRS** Knob to slew the CDI Course Pointer to a course bearing directly to the waypoint.
- 3) Press the **OBS** Softkey again to disable OBS Mode.

GENERIC TIMER

- 1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to select the time field (hh/mm/ss). Turn the **FMS** Knobs to set the desired time, then press the **ENT** Key. The UP/DOWN field is now highlighted.
- 2) Turn the small **FMS** Knob to display the UP/DOWN window. Turn the **FMS** Knob to select 'UP' or 'DOWN', then press the **ENT** Key. 'START?' is now highlighted.
- 3) Press the **ENT** Key to START, STOP, or RESET the timer (if the timer is counting DOWN, it will start counting UP after reaching zero). Press the **CLR** Key or the **TMR/REF** Softkey to remove the window.

CONFIGURE VSPEED BUGS INDIVIDUALLY

- 1) Press the **TMR/REF** Softkey.
- 2) Turn the large **FMS** Knob to highlight the desired Vspeed.
- 3) Use the small **FMS** Knob to change the Vspeed in 1-kt increments (when a speed has been changed from a default value, an asterisk appears next to the speed).

- 4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the ON/OFF field.
- 5) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.
- 6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

TURN VSPEED BUGS ON OR OFF BY CATEGORY

- 1) Press the **TMR/REF** Softkey.
- 2) Press the **MENU** Key.
- 3) Turn the **FMS** Knob to highlight the desired option.
- 4) Press the **ENT** Key. Press the **TMR/REF** Softkey to remove the window.

SET BAROMETRIC/RADAR ALTIMETER (RA OPTIONAL) MINIMUM DESCENT ALTITUDE

- 1) Press the **TMR/REF** Softkey.
- 2) Turn the large **FMS** Knob to highlight the OFF/BARO/RAD ALT field to the right of 'MINIMUMS'.
- 3) Turn the small **FMS** Knob clockwise to select BARO or RAD ALT.
- 4) Press the **ENT** Key.
- 5) Use the small **FMS** Knob to enter the desired altitude.
- 6) Press the **ENT** Key.
- 7) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

DISPLAYING WIND DATA

- 1) Press the **PFD** Softkey.
- 2) Press the **WIND** Softkey to display wind data below the Selected Heading.
- 3) Press one of the **OPTN** softkeys to change how wind data is displayed.
- 4) To remove the Wind Data Window, press the **OFF** Softkey.

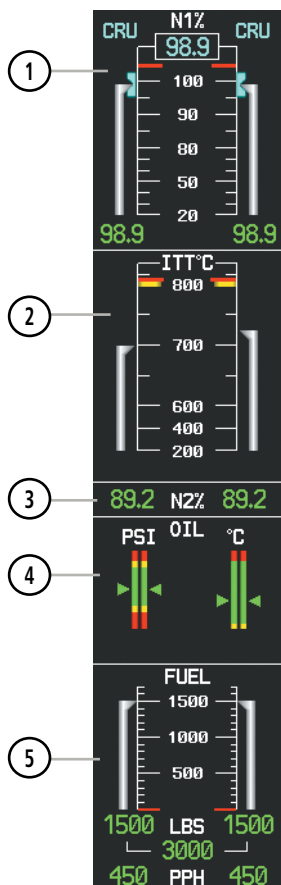
Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

ENGINE INDICATION SYSTEM



NOTE: Refer to the Airplane Flight Manual (AFM) for engine limitations.

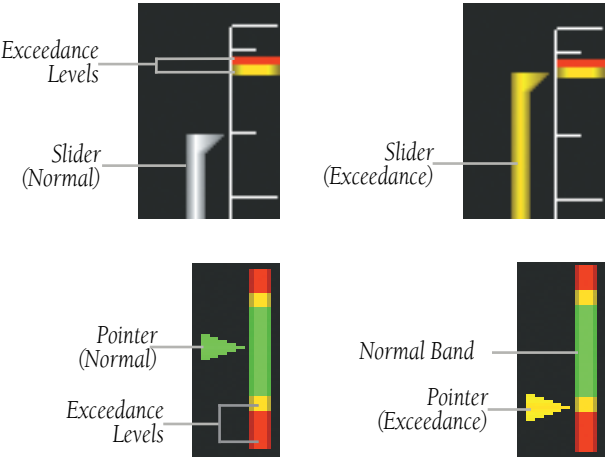


EIS Display (Engine Run)

- | | |
|---|---------------------------------------|
| ① Engine Fan Rotation Speed | ④ Engine Oil Pressure and Temperature |
| ② Interturbine Temperature | ⑤ Fuel Display |
| ③ Engine High Pressure Turbine Rotation Speed | |

When an unsafe operating condition occurs, the pointer and readout color change to indicate a caution (yellow) or warning (red). If the time limit for an unsafe condition is exceeded, the color of the sliders, pointers, and digits may change to denote an increase

in priority level, even if the parameter is still within the lower priority condition range. If sensor data for a parameter becomes invalid or unavailable, a red “X” is displayed across the indicator and/or readout.



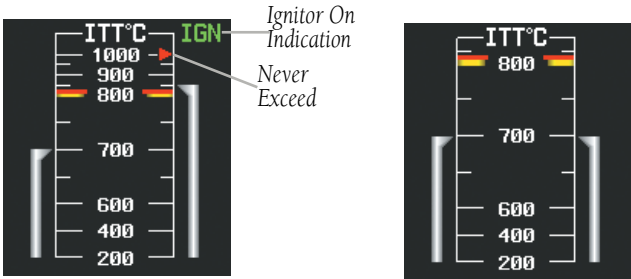
Indicators and Exceedance Levels

INTER-TURBINE TEMPERATURE

When either engine is not running, red triangles indicate the ITT limits which must not be exceeded while starting. When the respective engine ignitors are on, ‘IGN’ appears in green text at the top of the ITT scales.

When both engines are running, the ITT scale is reduced and the red triangles are removed from display.

During an ITT exceedance, pointer(s) are displayed in yellow or red, and readout(s) are provided for each engine below the scale showing an exceedance.



Inter-Turbine Temperature Display (Right Engine Start)

Inter-Turbine Temperature Display (Both Engines Running)

GROUND OAT SET WINDOW

When the aircraft is parked or is taxiing, the reported ground Outside Air Temperature (OAT) for the airport can be set in the Ground OAT Set Window.



Ground OAT Set Window

Setting Outside Air Temperature (OAT)

- 1) Select the **TARGET N1** Softkey.
- 2) Select the **GND OAT** Softkey to display the Ground OAT Set Window.
- 3) To adjust the temperature in 1 °C increments, use the **OAT↑** and **OAT↓** softkeys,
- 4) To confirm the selected takeoff settings and close the Ground OAT Set Window, select the **ACCEPT** Softkey,

Or:

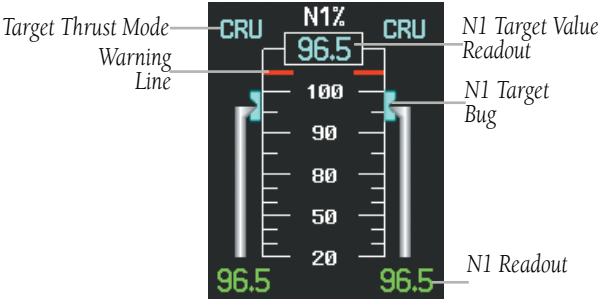
To cancel the operation, select the **BACK** Softkey.

ENGINE SPOOL ROTATION SPEEDS (N1 AND N2)

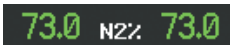
The N1 display ranges from 20 to 110% of maximum rotational speed. If N1 drops below 20%, the sliders are removed from the scale while the readouts remain displayed below.

Caution or warning conditions cause the exceedance pointer(s) and readout(s) to be displayed in yellow or red respectively.

The N2 readouts are located beneath the ITT display. Readouts normally appear in green. An N2 exceedance readout will appear in red. If the readout is out of range, dashes will be displayed instead of a readout.



N1 Display



N2 Display

TARGET N1 THRUST MODE

When the system is powered up on the ground, the TO/GA target thrust mode is shown in light blue subdued text, and the N1 target readout box displays dashes. After the ground OAT is accepted, the target thrust mode is shown in light blue, the N1 target readout box contains the target N1 percentage, and the target N1 bugs are displayed along the vertical scale for each engine.

If the flight conditions or air data are out of range, the selected target thrust mode is shown in light blue subdued text, the N1 target readout is replaced with dashes, and the N1 target bugs are removed from display.

Indication	Target Thrust Mode
TO/GA	Takeoff/Go Around
CLB	Climb
CRU	Cruise
MAN	Manual

Thrust Mode Indications



NOTE: The system automatically selects a target thrust mode under certain flight conditions; refer to the Airplane Flight Manual Supplement (AFMS) for a detailed discussion of automatic thrust mode transitions.

Selecting Takeoff, Climb, or Cruise Target N1 Thrust Mode

- 1) Select the **TARGET N1** Softkey
- 2) Select one of the following Softkeys:
 - TO/GA:** Selects the Takeoff/Go Around target N1 thrust mode.
 - CLB:** Selects the Climb target N1 thrust mode.
 - CRU:** Selects the Cruise target N1 thrust mode.
- 3) To return to the top level of Softkeys without changing the target thrust mode, select the **BACK** Softkey.

Manually Entering Target N1 Speed

- 1) Select the **TARGET N1** Softkey.
- 2) Select the **MAN** Softkey.
- 3) Select the following Softkeys to adjust the target N1% readout and bugs.
 - +1:** Increases the target N1 speed by 1%..
 - +0.1:** Increases the target N1 speed by 0.1%.
 - 1:** Decreases the target N1 speed by -1%.
 - 0.1:** Decreases the target N1 speed by -0.1%
- 4) Select the **BACK** Softkey to return to the top level of Softkeys.

Removing N1 Target Speed Display

- 1) Select the **TARGET N1** Softkey.
- 2) Select the **OFF** Softkey.

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

NAV/COM/TRANSPONDER/AUDIO PANEL

ENTER OR CHANGE FLIGHT ID

- 1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to highlight the Flight ID field.
- 2) Turn the small **FMS** Knob to enter the first character.
- 3) Turn the large **FMS** Knob to select the next field.
- 4) Turn the small **FMS** Knob to enter the next desired character.
- 5) Repeat steps 3 and 4 until the desired Flight ID is entered.
- 6) Press the **ENT** Key to update the Flight ID.

ADF TUNING (OPTIONAL)

- 1) Tune the ADF using the remote ADF control head.
- 2) If two ADF systems are installed, press the **AUX** Key on the desired audio panel to monitor ADF2 audio.

DME TUNING

- 1) Press the **DME** Softkey.
- 2) If two DMEs are installed, turn the large **FMS** to select the DME source field.
- 3) Turn the small **FMS** Knob to select the desired Nav radio.
- 4) Press the **ENT** Key to complete the selection.
- 5) If two DMEs are installed, press the **AUX** Key on the desired audio panel to monitor DME2 audio.

ENTER A TRANSPONDER CODE

- 1) Press the **XPDR** Softkey to display the transponder mode selection softkeys.
- 2) Press the **XPDR1** or **XPDR2** Softkey to select the active transponder.
- 3) Press the **CODE** Softkey to display the transponder code selection softkeys, for digit entry.
- 4) Press the digit softkeys to enter the code in the code field. When entering the code, the next key in sequence must be pressed within 10 seconds, or the entry is cancelled and restored to the previous code. Five seconds after the fourth digit has been entered, the transponder code becomes active.

SELECT TRANSPONDER MODE

- 1) Press the **XPDR** Softkey.
- 2) If the aircraft is equipped with two transponders, press the **XPDR1** or **XPDR2** Softkey to select the active transponder.
- 3) Press the desired transponder mode softkey (**STBY**, **ON**, **ALT**, or **GND**).

SELECTING A COM RADIO

Transmit/Receive

Press the **COM1 MIC**, **COM2 MIC**, or **COM3 MIC** Key (HF, if installed) on the audio panel.

Receive Only

Press the **COM1**, **COM2**, or **COM3** Key (HF, if installed) on the audio panel.

SELECTING A NAV RADIO

- 1) To begin navigating using a navigation radio, press the **CDI** Softkey on the PFD to select VOR1/LOC1 (NAV1) or VOR2/LOC2 (NAV2).
- 2) Press the **NAV1**, **NAV2**, **DME**, or **ADF** Key on the audio panel to select or deselect the navigation radio audio source. All radio keys can be selected individually or together.

NAV/COM TUNING

- 1) Turn the respective tuning knobs to enter the desired frequency into the standby frequency field. The large knob enters MHz and the small knob enters kHz.
- 2) Press the appropriate **Frequency Transfer** Key to place the frequency into the active frequency field.

Or:

- 1) Press the **COM** or **NAV** Key on the MFD/PFD Control Unit to select the desired COM or NAV frequency box.
- 2) Turn the **FMS** Knob to tune the desired frequency (large knob for MHz; small knob for kHz).
- 3) Press the **Frequency Transfer** Key to transfer the frequency to the active field.

INTERCOM SYSTEM (ICS) ISOLATION

Pressing the **INTR COM** Key on either Audio Panel selects and deselects the intercom on both Audio Panels. The annunciator is lit when the intercom is active. The intercom connects the pilot and copilot together. Either the pilot or copilot may select or deselect the intercom.

The **MAN SQ** Key allows either automatic or manual control of the intercom squelch setting. Pressing the **MAN SQ** Key enables manual squelch control, indicated by the MAN SQ annunciator.

- When the MAN SQ Annunciator is extinguished (Automatic Squelch is on), the **ICS** Knob controls only the volume (pressing the **ICS** Knob has no effect on the VOL/SQ selection).
- When the MAN SQ Annunciator is illuminated (Manual Squelch), the **ICS** Knob controls either volume or squelch (selected by pressing the **ICS** Knob and indicated by the VOL or SQ annunciation).

Cabin Address

The **CABIN** Key initiates two way communication between the pilot or copilot and the passengers in the cabin. The annunciator is lit when the cabin intercom is active on either Audio Panel.

When the flight crew wants to communicate with the passengers, the pilot or copilot presses the **CABIN** Key to signal that communication is desired.

PASSENGER ADDRESS (PA) SYSTEM

A passenger address system is provided by pressing the **PA** Key to deliver messages to the passengers. The message is heard by the other pilot on the headset only if the **PA** Key is enabled on both audio panels. PA messages are one way from the flight deck to the passengers.

CLEARANCE RECORDER AND PLAYER



NOTE: Pressing the play key on the pilot's Audio Panel plays recorded audio to the Pilot. Pressing the play key on the Copilot's Audio Panel plays recorded audio to the Copilot.

Recorded COM audio is stored in separate memory blocks. Once 2.5 minutes of recording time have been reached, the recorder begins recording over the stored memory blocks, starting from the oldest block.

The **PLAY** Key controls the play function. The PLAY annunciator is illuminated to indicate when play is in progress. The PLAY annunciator extinguishes after playback is finished.

Pressing the **PLAY** Key once plays the latest recorded memory block and then returns to normal operation. Pressing the **PLAY** Key again during play of a memory block stops play. If a COM input signal is detected during play of a recorded memory block, play is halted.

Pressing the **PLAY** Key twice within one-half second while audio is playing plays the previous block of recorded audio. Each subsequent two presses of the **PLAY** Key within one-half second backtracks through the recorded memory blocks to reach and play any recorded block.

AUTOMATIC FLIGHT CONTROL SYSTEM



NOTE: If sensor information (other than attitude) required for a flight director mode becomes invalid or unavailable, the flight director automatically reverts to the default mode for that axis.



NOTE: If the attitude information required for the default flight director modes becomes invalid or unavailable, the autopilot automatically disengages.

FLIGHT DIRECTOR ACTIVATION

An initial press of a key listed in the following table (when the flight director is not active) activates the pilot-side flight director in the listed modes.

Control Pressed	Modes Selected			
	Lateral		Vertical	
FD Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
AP Key	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
CWS Button	Roll Hold (default)	ROL	Pitch Hold (default)	PIT
GA Switch	Go Around	GA	Go Around	GA
ALT Key	Roll Hold (default)	ROL	Altitude Hold	ALT
VS Key	Roll Hold (default)	ROL	Vertical Speed	VS
VNV Key	Roll Hold (default)	ROL	Vertical Path Tracking*	VPTH
NAV Key	Navigation**	GPS VOR LOC	Pitch Hold (default)	PIT
BC Key	Backcourse***	BC	Pitch Hold (default)	PIT
APR Key	Approach**	GPS VOR LOC	Pitch Hold (default) Glidepath Glideslope	PIT GP GS
HDG Key	Heading Select	HDG	Pitch Hold (default)	PIT

*Valid VNV flight plan must be entered before **VNV** Key press activates flight director.

The selected navigation receiver must have a valid VOR or LOC signal or active GPS course before **NAV or **APR** Key press activates flight director.

***The selected navigation receiver must have a valid LOC signal before **BC** Key press activates flight director.

VERTICAL MODES

Vertical Mode	Description	Control	Annunciation
Pitch Hold	Holds the current aircraft pitch attitude; may be used to climb/descend to the Selected Altitude	(default)	PIT
Selected Altitude Armed	AFCS armed to capture the altitude displayed in the Selected Altitude window	*	ALTS
Altitude Hold	Holds the current Altitude Reference	ALT Key	ALT nnnnn FT
Vertical Speed	Maintains the current aircraft vertical speed; may be used to climb/descend to the Selected Altitude	VS Key	VS nnnn FPM
Flight Level Change, IAS Hold	Maintains the current aircraft airspeed (in IAS or Mach) while the aircraft is climbing/descending to the Selected Altitude	FLC Key	FLC nnn KT
Flight Level Change, Mach Hold			FLC M .nnn
VNAV	Captures and tracks the VNAV flight path	VNV Key	VPTH
VNAV Target Altitude Armed	AFCS armed to capture the altitude displayed in the VNAV Target Altitude window	**	ALTV
Glidepath	Captures and tracks the WAAS glidepath on approach	APR Key	GP
Glideslope	Captures and tracks the ILS glideslope on approach		GS
Go Around	Disengages the autopilot and commands a constant pitch attitude and wings level	GA Switch	GA

* ALTS armed automatically when PIT, VS, FLC, or GA active, and under VPTH when Selected Altitude is to be captured instead of VNAV Target Altitude

** ALTV armed automatically under VPTH when VNAV Target Altitude is to be captured instead of Selected Altitude

LATERAL MODES

Lateral Mode	Description	Control	Annunciation
Roll Hold	Holds current aircraft roll attitude or rolls wings level, depending on commanded bank angle	(default)	ROL
Low Bank	Limits maximum commanded roll angle	BANK Key	*
Heading Select	Captures and tracks Selected Heading	HDG Key	HDG
Navigation, GPS Arm/Capture/Track	Captures and tracks selected navigation source (GPS, VOR, LOC)	NAV Key	GPS
Navigation, VOR Enroute Arm/Capture/Track			VOR
Navigation, LOC Arm/Capture/Track (No Glideslope)			LOC
Backcourse Arm/Capture/Track	Captures and tracks a localizer signal for backcourse approaches	BC Key	BC
Approach, GPS Arm/Capture/Track	Captures and tracks selected navigation source (GPS, VOR, LOC)	APR Key	GPS
Approach, VOR Arm/Capture/Track			VAPP
Approach, ILS Arm/Capture/Track (Glideslope Mode automatically armed)			LOC
Go Around	Disengages autopilot and commands a constant pitch angle and wings level	GA Switch	GA

* No annunciation appears in the AFCS Status Box. The acceptable bank angle range is indicated in green along the Roll Scale of the Attitude Indicator.

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCS
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

GPS NAVIGATION

DIRECT-TO NAVIGATION

Direct-to Navigation using the MFD

- 1) Press the **Direct-to** () Key on the MFD or MFD Controller.
- 2) Enter the waypoint identifier.
- 3) Press the **ENT** Key to confirm the identifier. The 'Activate?' field is highlighted.
- 4) If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 5.
- 5) Turn the large **FMS** Knob counterclockwise to place the cursor over the 'VNV' altitude field.
- 6) Enter the desired altitude.
- 7) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 9.
- 8) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.
- 9) Press the **ENT** Key. The cursor is now flashing in the VNV offset distance field.
- 10) Enter the desired offset distance before (-) the waypoint.
- 11) Press the **ENT** Key. The 'Activate?' field is highlighted.
- 12) Press the **ENT** Key to activate.

Direct-to Navigation using the PFD

- 1) Press the **Direct-to** Key () on the PFD.
- 2) Turn the large **FMS** Knob to place the cursor in the desired selection field.
- 3) Turn the small **FMS** Knob to begin selecting the desired identifier, location, etc.
- 4) Press the **ENT** Key.
- 5) The cursor is now flashing on 'ACTIVATE?'. If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 6.
- 6) Turn the large **FMS** Knob counterclockwise to place the cursor over the 'ALT' altitude field.

- 7) Turn the small **FMS** Knob to enter the desired altitude constraint.
- 8) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 10.
- 9) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.
- 10) Press the **ENT** Key. The cursor is placed in the 'OFFSET' field.
- 11) Turn the small **FMS** Knob to enter the desired offset distance (-) from the selected Direct-to.
- 12) Press the **ENT** Key to highlight 'Activate?' or turn the large **FMS** Knob to highlight the 'CRS' field.
- 13) Turn the small **FMS** Knob to enter the desired course to the waypoint.
- 14) Press the **ENT** Key to highlight 'ACTIVATE?'.
- 15) Press the **ENT** Key again to activate the Direct-to.

ACTIVATE A STORED FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD, or MFD Controller, and turn the small **FMS** Knob to display the Flight Plan Catalog Page.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the desired flight plan
- 4) Select the **ACTIVE** Softkey. The confirmation window is now displayed.
- 5) With 'OK' highlighted, press the **ENT** Key to activate the flight plan. To cancel the flight plan activation, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

ACTIVATE A FLIGHT PLAN LEG

- 1) From the Active Flight Plan Page, press the **FMS** Knob to activate the cursor and turn the large **FMS** Knob to highlight the desired waypoint.
- 2) Select the **ACT LEG** Softkey.
OR
Press the **MENU** Key, select the 'Activate Leg' option from the page menu and press the **ENT** Key. This step must be used when activating a leg from the PFD.
- 3) With 'Activate' highlighted, press the **ENT** Key.

STOP NAVIGATING A FLIGHT PLAN

- 1) Press the **FPL** Key to display the Active Flight Plan Page.
- 2) Press the **MENU** Key to display the Page Menu Window.
- 3) Turn the large **FMS** Knob to highlight 'Delete Flight Plan' and press the **ENT** Key. With 'OK' highlighted, press the **ENT** Key to deactivate the flight plan. This will not delete the stored flight plan, only the active flight plan.

VERTICAL NAVIGATION (VNAV)

The navigation database only contains altitudes for procedures that call for "Cross at" altitudes. If the procedure states "Expect to cross at," the altitude is not in the database. In this case the altitude may be entered manually.

ACTIVE FLIGHT PLAN				
KIXD / KDFW				
	DTK	DIS	ALT	
KARLA	221°	11.7NM	13000FT	Large White Text
COVIE	221°	9.0NM	12400FT	
LEMYN	220°	8.0NM	9900FT	Large Light Blue Text
Approach - KDFW-RNAV 17L GPS LPV				
RIVET <i>iaf</i>	259°	18.8NM	4000FT	Small Light Blue Text
DRAAK	176°	3.3NM	2000FT	
INWOD	176°	3.2NM	3000FT	Small Light Blue Subdued Text
MENOL <i>faf</i>	176°	3.9NM	2300FT	
RW17L <i>map</i>	176°	5.3NM		
990FT	174°	0.8NM	990FT	Small White Text with Altitude Restriction Bar
POLKE				

5000FT

Cross AT or ABOVE 5,000 ft

2300FT

Cross AT 2,300 ft

3000FT

Cross AT or BELOW 3,000 ft

Altitudes associated with arrival and approach procedures are “auto-designated”. This means the system will automatically use the altitudes loaded with the arrival or approach for giving vertical flight path guidance outside the FAF. Note that these altitudes will be displayed as small light blue text.

Altitudes that are designated for use in vertical navigation may also be made “non-designated” by placing the cursor over the desired altitude and pressing the **CLR** Key. The altitude is now displayed only as a reference. It will not be used to give vertical flight path guidance. Other displayed altitudes may change due to re-calculations or rendered invalid as a result of manually changing an altitude to a non-designated altitude.

	White Text	Light Blue Text	Light Blue Subdued Text
Large Text	Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point. This altitude is provided as a reference and is not designated to be used in determining vertical flight path guidance.	Altitude has been entered by the pilot. Altitude is designated for use in giving vertical flight path guidance. Altitude does not match the published altitude in navigation database or no published altitude exists.	The system cannot use this altitude in determining vertical flight path guidance.
Small Text	Altitude is not designated to be used in determining vertical flight path guidance. Altitude has been retrieved from the navigation database and is provided as a reference.	Altitude is designated for use in giving vertical flight path guidance. Altitude has been retrieved from the navigation database or has been entered by the pilot and matches a published altitude in the navigation database.	The system cannot use this altitude in determining vertical flight path guidance.

FLIGHT PLANNING

WEIGHT PLANNING

All procedures apply to the MFD unless otherwise stated.

Entering Weight Parameters

Turn the large **FMS** Knob to select the 'AUX' page group. Turn the small **FMS** Knob to select the Weight Planning Page.

- 1) Select the **EMPTY WT** Softkey to place the cursor in the Basic Empty Weight field.
- 2) Enter the desired aircraft empty weight.
- 3) Press the **ENT** Key. The cursor is now over the 'PILOT & STORES' field.
- 4) Enter the desired weight of Pilot & Stores.
- 5) Press the **ENT** Key.
- 6) Continue repeating these steps until all desired weights have been entered.

Entering Fuel Parameters

- 1) If necessary, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to place the cursor in the 'FUEL ON BOARD' field.
- 3) Select the **FOB SYNC** Softkey to enter the fuel on board quantity as read from the aircraft fuel quantity sensors.

Or:

Manually enter the desired fuel quantity.

- 4) Press the **ENT** Key. The cursor is now in the 'FUEL RESERVES' field.
- 5) Enter the desired reserve fuel quantity.
- 6) Press the **FMS** Knob to remove the cursor.

TRIP PLANNING

- 1) Turn the large **FMS** Knob to select the 'AUX' page group.
- 2) Turn the small **FMS** Knob to select the Trip Planning Page.
- 3) The current 'PAGE MODE' is displayed at the top of the page: 'AUTOMATIC' or 'MANUAL'. To change the page mode, select the **AUTO** or **MANUAL** Softkey.

4) For Direct-to planning:

- a) Select the **WPTS** Softkey and verify that the starting waypoint field indicates 'P.POS' (present position).
- b) If necessary, press the **MENU** Key and select 'Set WPT to Present Position' to display 'P.POS'.
- c) Press the **ENT** Key and the flashing cursor moves to the ending waypoint field.
- d) Enter the identifier of the ending waypoint and press the **ENT** Key to accept the waypoint.

Or:

For point-to-point planning:

- a) Enter the identifier of the starting waypoint.
- b) Once the waypoint's identifier is entered, press the **ENT** Key to accept the waypoint. The flashing cursor moves to the ending waypoint.
- c) Again, enter the identifier of the ending waypoint.
- d) Press the **ENT** Key to accept the waypoint.

Or:

For flight plan leg planning:

- a) Select the **FPL** Softkey (at the bottom of the display).
- b) Turn the small **FMS** Knob to select the desired flight plan (already stored in memory), by number.
- c) Turn the large **FMS** Knob to highlight the 'LEG' field.
- d) Turn the small **FMS** Knob to select the desired leg of the flight plan, or select 'CUM' to apply trip planning calculations to the entire flight plan. Selecting 'FPL 00' displays the active flight plan. If an active flight plan is selected, 'REM' will be an available option to display planning data for the remainder of the flight plan.

NOTE: The page mode must be set to 'MANUAL' to perform the following steps.

5) Turn the large **FMS** Knob to highlight the departure time (DEP TIME) field.

NOTE: The departure time on the Trip Planning Page is used for preflight planning. Refer to the Utility Page for the actual flight departure time.

- 6) Enter the departure time. Press the **ENT** Key when finished. Departure time may be entered in local or UTC time, depending upon system settings.
- 7) The flashing cursor moves to the ground speed (GS) field. Enter the ground speed. Press the **ENT** Key when finished. Note that in 'automatic' page mode, ground speed is provided by the system.
- 8) The flashing cursor moves to the fuel flow field. Enter the fuel flow. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, fuel flow is provided by the system.
- 9) The flashing cursor moves to the fuel onboard field. Modify the fuel onboard. Press the **ENT** Key when finished. In 'AUTOMATIC' mode, fuel onboard is provided by the entry made on the Weight Planning Page.
- 10) The flashing cursor moves to the calibrated airspeed (CALIBRATED AS) field. Enter the calibrated airspeed. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, calibrated airspeed is provided by the system.
- 11) The flashing cursor moves to the altitude (IND ALTITUDE) field. Enter the altitude. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, altitude is provided by the system.
- 12) The flashing cursor moves to the barometric setting (PRESSURE) field. Enter the desired baro setting. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, the baro setting is provided by the setting entered on the PFD.
- 13) The flashing cursor moves to the air temperature (TOTAL AIR TEMP) field. Enter the desired air temperature. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, air temperature is provided by the system outside air temperature.

CREATE A NEW USER WAYPOINT DEFINED BY LATITUDE & LONGITUDE

- 1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.
- 2) Turn the small **FMS** Knob to select the User WPT Information Page.
- 3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.
- 4) Enter the desired waypoint name.
- 5) Press the **ENT** Key.

- 6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.
 - a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
 - b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.
- 7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.
- 8) Turn the small **FMS** Knob to select LAT/LON (latitude and longitude).
- 9) Press the **ENT** Key.

CREATE A NEW USER WAYPOINT DEFINED BY RADIALS FROM OTHER WAYPOINTS

- 1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.
- 2) Turn the small **FMS** Knob to select the User WPT Information Page.
- 3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.
- 4) Enter the desired waypoint name.
- 5) Press the **ENT** Key.
- 6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.
 - a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
 - b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.
- 7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.
- 8) Turn the small **FMS** Knob to select RAD/RAD (radial/radial).
- 9) Press the **ENT** Key.
- 10) The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:

- a) When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.
- b) Turn the large **FMS** Knob to select the desired waypoint.
- c) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.
- c) Turn the large **FMS** Knob to select the desired waypoint.
- d) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.
- c) Turn the large **FMS** Knob to select the desired waypoint.
- d) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'USER' waypoints.
- c) Turn the large **FMS** Knob to select the desired waypoint.
- d) Press the **ENT** Key.

- 11) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.
- 12) Press the **ENT** Key.
- 13) Repeat step 10 to enter the next waypoint name.
- 14) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field for the second waypoint. Enter the desired radial from the reference waypoint.
- 15) Press the **ENT** Key.
- 16) Press the **FMS** Knob to remove the flashing cursor.

CREATE A NEW USER WAYPOINT DEFINED BY A RADIAL & DISTANCE FROM ANOTHER WAYPOINT

- 1) Turn the large **FMS** Knob on the MFD Control Unit to select the 'WPT' page group.
 - 2) Turn the small **FMS** Knob to select the User WPT Information Page.
 - 3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.
 - 4) Enter the desired waypoint name.
 - 5) Press the **ENT** Key.
 - 6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.
 - a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
 - b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.
 - 7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.
 - 8) Turn the small **FMS** Knob to select RAD/DIS (radial/distance).
 - 9) Press the **ENT** Key.
 - 10) The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:
 - a) When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.
 - b) Turn the large **FMS** Knob to select the desired waypoint.
 - c) Press the **ENT** Key.
- Or:**
- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
 - b) Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

Or:

a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

b) Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

c) Turn the large **FMS** Knob to select the desired waypoint.

d) Press the **ENT** Key.

11) Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

12) Press the **ENT** Key.

13) The cursor is now displayed in the 'DIS' (distance) field. Enter the desired distance from the reference waypoint.

14) Press the **ENT** Key.

15) Press the **FMS** Knob to remove the flashing cursor.

DELETE A USER WAYPOINT

1) Turn the large **FMS** Knob to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Press the **FMS** Knob to activate the cursor.

4) Turn the large **FMS** Knob to the place the cursor in the 'USER WAYPOINT LIST' field.

5) Turn the small **FMS** Knob to highlight the desired waypoint.

6) Select the **DELETE** Softkey.

7) The message 'Would you like to delete the user waypoint?' is displayed. With 'YES' highlighted, press the **ENT** Key.

CREATE A NEW FLIGHT PLAN



NOTE: When creating a new flight plan in the Active Flight Plan Window, the first leg is activated automatically after it is created.

Creating an active flight plan:

- 1) Press the **FPL** Key.
- 2) Press the **FMS** Knob to activate the cursor (only on MFD).
- 3) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
- 4) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.
- 5) Repeat step numbers 3 and 4 to enter each additional flight plan waypoint.
- 6) When all waypoints have been entered, press the **FMS** Knob to remove the cursor.

Creating a stored flight plan:

- 1) Press the **FPL** Key.
- 2) Turn the small **FMS** Knob clockwise to display the Flight Plan Catalog Page.
- 3) Select the **NEW** Softkey; or press the **MENU** Key, highlight 'Create New Flight Plan', and press the **ENT** Key to display a blank flight plan for the first empty storage location.
- 4) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
- 5) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key.
- 6) Repeat step numbers 4 and 5 to enter each additional flight plan waypoint.
- 7) When all waypoints have been entered, press the **FMS** Knob to return to the Flight Plan Catalog Page. The new flight plan is now in the list.

IMPORT A FLIGHT PLAN FROM AN SD CARD

- 1) Insert the SD card containing the flight plan in the top card slot on the MFD.
- 2) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page on the MFD.
- 3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
- 4) Press the **FMS** Knob to activate the cursor.
- 5) Turn either **FMS** Knob to highlight an empty or existing flight plan.
- 6) Select the **IMPORT** Softkey.

If an empty flight plan is selected, a list of the available flight plans on the SD card will be displayed.

Or:

If an existing flight plan is selected, an 'Overwrite existing flight plan? OK or CANCEL' prompt is displayed. Press the **ENT** Key to choose to overwrite the selected flight plan and see a list of the available flight plans on the SD card. If overwriting the existing flight plan is not desired, select 'CANCEL' using the **FMS** Knob, press the **ENT** Key, select another existing or empty flight plan, and again select the **IMPORT** Softkey.

- 7) Turn the small **FMS** Knob to highlight the desired flight plan for importing.
- 8) Press the **ENT** Key.

INSERT A WAYPOINT IN THE ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the active flight plan.
- 2) If necessary, press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the desired flight plan waypoint. The new waypoint is inserted before the highlighted waypoint.
- 4) Turn the small **FMS** Knob. The Waypoint Information Window is now displayed.
- 5) Enter the new flight plan waypoint by one of the following:
 - a) Enter the user waypoint identifier, facility, or city.
 - b) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'NRST' airport waypoints to the aircraft's current position.
- c) Turn the large **FMS** Knob to select the desired waypoint.
- d) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.
- c) Turn the large **FMS** Knob to select the desired waypoint.
- d) Press the **ENT** Key.

Or:

- a) Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- b) Turn the small **FMS** Knob to the right to display the 'USER' waypoints.
- c) Turn the large **FMS** Knob to select the desired user waypoint.
- d) Press the **ENT** Key.

- 6) Press the **ENT** Key again to "accept" the waypoint.

ENTER AN AIRWAY IN A FLIGHT PLAN

- 1) Press the **FPL** Key.
- 2) Press the **FMS** Knob to activate the cursor (not required on the PFD).
- 3) Turn the large **FMS** Knob to highlight the waypoint after the desired airway entry point. If this waypoint is not a valid airway entry point, a valid entry point should be entered at this time.
- 4) Turn the small **FMS** Knob one click clockwise and select the **LD AIRWY** Softkey, or press the **MENU** Key and select "Load Airway". The Select Airway Page is displayed. The **LD AIRWY** Softkey or the "Load Airway" menu item is available only when an acceptable airway entry waypoint has been chosen (the waypoint ahead of the cursor position).

- 5) Turn the **FMS** Knob to select the desired airway from the list, and press the **ENT** Key. Low altitude airways are shown first in the list, followed by “all” altitude airways, and then high altitude airways.
- 6) Turn the **FMS** Knob to select the desired airway exit point from the list, and press the **ENT** Key. ‘LOAD?’ is highlighted.
- 7) Press the **ENT** Key. The system returns to editing the flight plan with the new airway inserted.

INVERT AN ACTIVE FLIGHT PLAN

- 1) Press the **FPL** Key to display the active flight plan.
- 2) Press the **MENU** Key to display the Page Menu.
- 3) Turn the large **FMS** Knob to highlight ‘Invert Flight Plan’.
- 4) Press the **ENT** Key. The original flight plan remains intact in its flight plan catalog storage location.
- 5) With ‘OK’ highlighted, press the **ENT** Key to invert the flight plan.

REMOVE A DEPARTURE, ARRIVAL, APPROACH, OR AIRWAY FROM A FLIGHT PLAN

- 1) Press the **FPL** Key to display the active flight plan. Press the **FMS** Knob to activate the cursor.

Or, for a stored flight plan:

 - a) Press the MFD **FPL** Key and turn the small **FMS** Knob to select the Flight Plan Catalog Page.
 - b) Press the **FMS** Knob to activate the cursor.
 - c) Turn the large **FMS** Knob to highlight the desired flight plan.
 - d) Select the **EDIT** Softkey.
- 2) Turn the large **FMS** Knob to highlight the title for the approach, departure, arrival, or airway to be deleted. Titles appear in white directly above the procedure’s waypoints.
- 3) Press the **CLR** Key to display a confirmation window.
- 4) With ‘OK’ highlighted, press the **ENT** Key to remove the selected procedure or airway.

STORE A FLIGHT PLAN

- 1) After creating a flight plan on either the PFD or MFD, it may be saved by pressing the **MENU** Key.
- 2) Turn the large **FMS** Knob to highlight 'Store Flight Plan' and press the **ENT** Key.
- 3) With 'OK' highlighted, press the **ENT** Key to store the flight plan.

EDIT A STORED FLIGHT PLAN

- 1) Press the **FPL** Key for the MFD and turn the small **FMS** Knob to display the Flight Plan Catalog Page.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the desired flight plan.
- 4) Select the **EDIT** Softkey.
- 5) Turn the large **FMS** Knob to place the cursor in the desired location.
- 6) Enter the changes, then press the **ENT** Key.
- 7) Press the **FMS** Knob to return to the Flight Plan Catalog Page.

DELETE A WAYPOINT FROM THE FLIGHT PLAN

- 1) Press the **FPL** Key to display the active flight plan. Press the **FMS** Knob to activate the cursor.

Or, for a stored flight plan:

- a) Press the **FPL** Key of the MFD and turn the small **FMS** Knob to select the Flight Plan Catalog Page.
 - b) Press the **FMS** Knob to activate the cursor.
 - c) Turn the large **FMS** Knob to highlight the desired flight plan.
 - d) Select the **EDIT** Softkey.
- 2) Turn the large **FMS** Knob to highlight the waypoint to be deleted.
 - 3) Press the **CLR** Key to display a 'REMOVE (Wpt Name)?' confirmation window.
 - 4) With 'OK' highlighted, press the **ENT** Key to remove the waypoint. To cancel the delete request, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.
 - 5) Once all changes have been made, press the **FMS** Knob to remove the cursor.

INVERT AND ACTIVATE A STORED FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD or MFD Control Unit.
- 2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
- 3) Press the **FMS** Knob to activate the cursor.
- 4) Turn the large **FMS** Knob to highlight the desired flight plan.
- 5) Select the **INVERT** Softkey. 'Invert and activate stored flight plan?' is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key. The selected flight plan is now inverted and activated. The original flight plan remains intact in its flight plan catalog storage location.

COPY A FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD or MFD Control Unit.
- 2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
- 3) Press the **FMS** Knob to activate the cursor.
- 4) Turn the large **FMS** Knob to highlight the flight plan to be copied.
- 5) Select the **COPY** Softkey. A 'Copy to flight plan #?' confirmation window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key to copy the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

DELETE A FLIGHT PLAN

- 1) Press the **FPL** Key on the MFD or MFD Control Unit.
- 2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
- 3) Press the **FMS** Knob to activate the cursor.
- 4) Turn the large **FMS** Knob to highlight the flight plan to be deleted.
- 5) Select the **DELETE** Softkey. A 'Delete flight plan #?' confirmation window is displayed.
- 6) With 'OK' highlighted, press the **ENT** Key to delete the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

GRAPHICAL FLIGHT PLAN CREATION

- 1) Press the **FPL** Key to display the Active Flight Plan Page on the MFD.
- 2) Press the **Joystick** to activate the map pointer. Use the **Joystick** to move the pointer to the desired point on the map to be inserted as a waypoint in the flight plan.
- 3) The default insertion point is at the end of the flight plan. If the selected waypoint is to be placed anywhere other than the end of the flight plan, press the **FMS** Knob to activate the cursor. Waypoints are inserted *ABOVE* the cursor. Turn the large **FMS** Knob to select the desired insertion point.
- 4) Select the **LD WPT** Softkey. The selected waypoint is inserted at the selected point. The default user waypoint naming is USR000, USR001, USR002, and so on.
- 5) To change the user waypoint name, follow the procedure for modifying a user waypoint.

EXPORT A FLIGHT PLAN TO AN SD CARD

- 1) Insert the SD card into the top card slot on the MFD.
- 2) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page on the MFD.
- 3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
- 4) Press the **FMS** Knob to activate the cursor.
- 5) Turn the large **FMS** Knob to highlight the flight plan to be exported.
- 6) Select the **EXPORT** Softkey.
- 7) Press the **ENT** Key to confirm the export.

PROCEDURES

LOAD AND ACTIVATE A DEPARTURE PROCEDURE

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'SELECT DEPARTURE'.
- 3) Press the **ENT** Key. The cursor is displayed in the 'DEPARTURE' field with a list of available departures.
- 4) Turn the large **FMS** Knob to highlight the desired departure.
- 5) Press the **ENT** Key. A list of runways may be displayed for the departure. If so, turn either **FMS** Knob to select the desired runway.
- 6) Press the **ENT** Key. The cursor is displayed in the 'TRANSITION' field with a list of available transitions.
- 7) Turn the large **FMS** Knob to highlight the desired transition.
- 8) Press the **ENT** Key.
- 9) With 'LOAD?' highlighted, press the **ENT** Key. The departure is active when the flight plan is active.

ACTIVATE A DEPARTURE LEG

- 1) Press the **FPL** Key on the MFD or MFD Control Unit to display the active flight plan.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the departure.
- 4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg is displayed.
- 5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AN ARRIVAL PROCEDURE

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'SELECT ARRIVAL'.
- 3) Press the **ENT** Key. The cursor is displayed in the 'ARRIVAL' field with a list of available arrivals.

- 4) Turn the large **FMS** Knob to highlight the desired arrival.
- 5) Press the **ENT** Key. A list of transitions is displayed for the selected arrival.
- 6) Turn either **FMS** Knob to select the desired transition.
- 7) Press the **ENT** Key. A list of runways may be displayed for the selected arrival.
- 8) Turn the large **FMS** Knob to highlight the desired runway.
- 9) Press the **ENT** Key.
- 10) With 'LOAD?' highlighted, press the **ENT** Key.
- 11) The arrival becomes part of the active flight plan.

ACTIVATE AN ARRIVAL LEG

- 1) Press the **FPL** Key to display the active flight plan.
- 2) Press the **FMS** Knob to activate the cursor.
- 3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the arrival.
- 4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg is displayed.
- 5) With 'ACTIVATE' highlighted, press the **ENT** Key.

LOAD AND/OR ACTIVATE AN APPROACH PROCEDURE



NOTE: If certain GPS parameters (WAAS, RAIM, etc.) are not available, some published approach procedures for the desired airport may not be displayed in the list of available approaches.

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'SELECT APPROACH'.
- 3) Press the **ENT** Key. A list of available approaches for the destination airport is displayed.
- 4) Turn either **FMS** Knob to highlight the desired approach.
- 5) Press the **ENT** Key. A list of available transitions for the selected approach procedure is now displayed.
- 6) Turn either **FMS** Knob to select the desired transition. The "Vectors" option assumes vectors will be received to the final course segment of

the approach and will provide navigation guidance relative to the final approach course.

- 7) Press the **ENT** Key. The cursor moves to the MINIMUMS field.
- 8) If desired, the DA/MDA for the selected approach procedure may be entered and displayed on the PFD. Turn the small **FMS** Knob in the direction of the green arrow to change the display from OFF to BARO or optional RAD ALT.
- 9) Press the **ENT** Key. The cursor moves to the altitude field. Turn the small **FMS** Knob to enter the published DA/MDA for the selected approach procedure.
- 10) Press the **ENT** Key. 'LOAD? or ACTIVATE?' is now displayed with 'LOAD?' highlighted.
- 11) Turn the large **FMS** Knob to select either 'LOAD?' or 'ACTIVATE?'.
Selecting 'LOAD?' enters the selected approach procedure into the active flight plan, but is not currently active. Selecting 'ACTIVATE?' enters the selected approach procedure into the active flight plan and activates the first leg of the approach.
- 12) Press the **ENT** Key.

ACTIVATE AN APPROACH IN THE ACTIVE FLIGHT PLAN

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'ACTIVATE APPROACH'.
- 3) Press the **ENT** Key.

ACTIVATE A VECTOR TO FINAL APPROACH FIX

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'ACTIVATE VECTOR-TO-FINAL'.
- 3) Press the **ENT** Key.
- 4) The final approach course becomes the active leg.

ACTIVATE A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

- 1) Press the **PROC** Key.
- 2) Turn the large **FMS** Knob to highlight 'ACTIVATE MISSED APPROACH'.
- 3) Press the **ENT** Key. A confirmation window is displayed.
- 4) With 'ACTIVATE' highlighted, press the **ENT** Key.

Or:

Press the go-around button.

HAZARD AVOIDANCE

CUSTOMIZING THE HAZARD DISPLAYS ON THE NAVIGATION MAP

- 1) With the Navigation Map Page displayed, press the **MENU** Key to display the Navigation Map Page Menu. The cursor flashes on the 'Map Setup' option.
- 2) Press the **ENT** Key. The Map Setup Menu is displayed. Turn the small **FMS** Knob to select 'Weather' to customize the display of weather features. Select 'Traffic' to customize the display of traffic.
- 3) Press the small **FMS** Knob to return to the Navigation Map Page.

STORMSCOPE® (OPTIONAL)



WARNING: The Stormscope system is not intended to be used for hazardous thunderstorm penetration. Weather information on the G1000 MFD is approved for weather avoidance only. Refer to the WX-500 Pilot's Guide for detailed operation.

Displaying Stormscope Lightning Data on the Navigation Map Page

- 1) Press the **MAP** Softkey.
- 2) Press the **STRMSCP** Softkey. Press the **STRMSCP** Softkey again to remove Stormscope Lightning Data from the Navigation Map Page.

Lightning Age	Symbol
Strike is less than 6 seconds old	
Strike is between 6 and 60 seconds old	
Strike is between 1 and 2 minutes old	
Strike is between 2 and 3 minutes old	

Select 'Cell' or 'Strike' as the Stormscope Lightning Mode

- 1) Press the **MENU** Key (with the Navigation Map Page displayed).
- 2) Turn either **FMS** Knob to highlight 'Map Setup'.
- 3) Press the **ENT** Key.
- 4) Turn the small **FMS** Knob to highlight 'Weather'.
- 5) Press the **ENT** Key.

- 6) Turn the large **FMS** Knob to place the cursor in the 'STRMSCP MODE' field.
- 7) Turn the small **FMS** Knob to display the 'Cell/Strike' window.
- 8) Turn either **FMS** Knob to select 'Cell' or 'Strike'. Press the **ENT** Key.
- 9) Push the **FMS** Knob to return to the Navigation Map Page.

Clear Stormscope Lightning Data from the Navigation Map Page

- 1) Press the **MENU** Key (with the Navigation Map Page displayed).
- 2) Turn either **FMS** Knob to highlight the 'Clear Stormscope® Lightning' field and press the **ENT** Key.



NOTE: If heading input is lost, strikes and/or cells must be cleared manually after the execution of each turn. This is to ensure that the strike and/or cell positions are depicted accurately in relation to the nose of the aircraft.

Stormscope Page

- 1) Turn the large **FMS** Knob until the Map Page group is selected.
- 2) Turn the small **FMS** Knob until the Stormscope Page is selected.

Change the Stormscope Lightning Mode Between 'Cell' and 'Strike'

- 1) Select the Stormscope Page.
- 2) Press the **MODE** Softkey. The **CELL** and **STRIKE** Softkeys are displayed. Press the **CELL** Softkey to display 'CELL' data or press the **STRIKE** Softkey to display 'STRIKE' data. 'CELL' or 'STRIKE' is displayed in the mode box located in the upper left corner of the Stormscope Page.



NOTE: "Cell mode" uses a clustering program to identify clusters of electrical activity that indicate cells.

Change the Viewing Mode Between 360° and 120°

- 1) Select the Stormscope Page.
- 2) Press the **VIEW** Softkey. The **360** and **ARC** Softkeys are displayed. Press the **360** Softkey to display a 360° viewing area or press the **ARC** Softkey to display a 120° viewing area.

Press the **CLEAR** Softkey to remove all Stormscope lightning data from the display.

XM WEATHER (SUBSCRIPTION OPTIONAL)



WARNING: Use of XM weather for hazardous weather penetration is not recommended. Weather information provided by XM Radio Service is approved only for weather avoidance, not penetration.

Displaying XM Weather on the Navigation Map Page

- 1) Select the **MAP** Softkey.
- 2) Select the **NEXRAD** or **XM LTNG** Softkey to display the desired weather. Select the applicable softkey again to remove weather data from the Navigation Map Page.

Display METAR and TAF information on the Airport Information Page

- 1) Turn the large **FMS** Knob to select the WPT Page Group.
- 2) Turn the small **FMS** Knob to select the Airport Information Page.
- 3) Select the **WX** Softkey to display METAR and TAF text (METAR and TAF information is updated every 12 minutes).

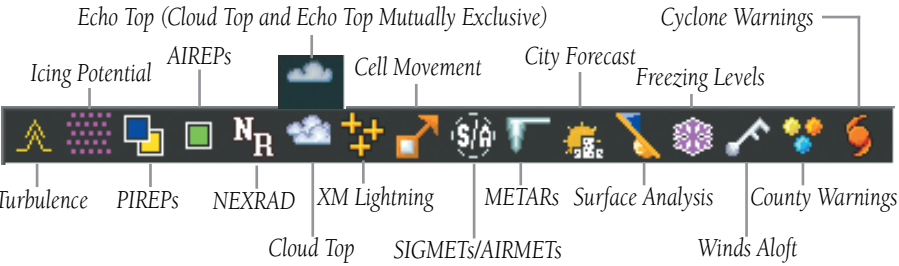
Displaying Weather on the Weather Data Link Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Weather Data Link Page.
- 3) Select the available softkeys to select the desired XM weather product.
- 4) Select the **LEGEND** Softkey to view the legends for the selected products. If necessary, turn either **FMS** Knob to scroll through the list. Press the small **FMS** Knob or the **ENT** Key to return to the map.

Map Panning Information – Weather Data Link Page

- 1) Push in the **Joystick** to display the panning arrow.
 - 2) Move the **Joystick** to place the panning arrow on AIRMETs, TFRs, METARs, SIGMETs, PIREPs or AIREPs.
 - 3) Press the **ENT** Key to display pertinent information for the selected product.
- Note that pressing the **ENT** Key when panning over an AIRMET or a SIGMET displays an information box that shows the text of the report. Panning over an airport with METAR information does not display more information but allows the user to press the **ENT** Key and select that Airport's Information Page to display the text of the report. Pressing the **ENT** Key when panning over a TFR displays TFR specific information.

Weather Products and Symbols



TRAFFIC SYSTEMS



WARNING: Traffic information shown on the G1000 Multi Function Display is provided as an aid in visually acquiring traffic. Pilots must maneuver the aircraft based only upon ATC guidance or positive visual acquisition of conflicting traffic.

- If Traffic information Service (TIS) is configured, a **STANDBY**, **OPERATE**, and **TNA MUTE** Softkey is displayed.
- If a Traffic Advisory System (TAS) or TCAS I system is configured, a **STANDBY**, **OPERATE** or **NORMAL**, **TEST**, and **ALT MODE** Softkey is displayed.

Traffic Symbol	Description
	Non-Threat Traffic (intruder is beyond 5 nm and greater than 1200' vertical separation)
	Proximity Advisory (PA) (TAS and TCAS I only) (intruder is within 5 nm and less than 1200' vertical separation)
	Traffic Advisory (TA) (Potential collision area is within 20 to 48 seconds)
	Traffic Advisory Off Scale

Traffic Symbol Description

Traffic Information Service (TIS)



NOTE: If the G1000 is configured to use an optional Traffic Advisory System (TAS) or TCAS I system, TIS is not available for use.



NOTE: Traffic Information Service (TIS) is only available when the aircraft is within the service volume of a TIS capable terminal radar site.

Displaying Traffic on the Traffic Map Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Traffic Map Page.
- 3) Select the **OPERATE** or **NORMAL** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
- 4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'STANDBY' is displayed in the Traffic Mode field.
- 5) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

Displaying Traffic on the Navigation Map

- 1) Ensure TIS is operating. With the Navigation Map displayed, select the **MAP** Softkey.
- 2) Select the **TRAFFIC** Softkey. Traffic is now displayed on the map.

Traffic Advisory System (TAS) or TCAS I System (Optional)

Displaying Traffic on the Traffic Map Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Traffic Map Page.
- 3) Select the **OPERATE** or **NORMAL** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
- 4) Select the **ALT MODE** Softkey to change the altitude volume. Select the desired altitude volume by pressing the **BELOW**, **NORMAL**, **ABOVE**, or **UNREST** (unrestricted) Softkey. The selection is displayed in the Altitude Mode field.

- 5) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'STANDBY' is displayed in the Traffic Mode field.
- 6) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.
- 7) Select the **FLT ID** Softkey to enable or disable Flight ID displayed with the intruder information.

System Self Test

- 1) With the Traffic Map Page displayed, set the range to 2/6 nm.
- 2) Select the **STANDBY** Softkey.
- 3) Select the **TEST** Softkey.
- 4) Self test takes approximately eight seconds to complete. When completed successfully, traffic symbols are displayed and a voice alert "TAS System Test OK" is heard. If the self test fails, the system reverts to Standby Mode and a voice alert "TAS System Test Fail" is heard.

Displaying Traffic on the Navigation Map

- 1) Ensure TAS is operating.
- 2) With the Navigation Map displayed, select the **MAP** Softkey.
- 3) Select the **TRAFFIC** Softkey. Traffic is now displayed on the map.

TERRAIN AWARENESS & WARNING SYSTEM

TAWS-A (Optional)



WARNING: The TAWS display shows supplemental information only. It should not be used for navigation.



NOTE: Terrain data is not displayed when the aircraft latitude is greater than 75 degrees north or 60 degrees south.



NOTE: TAWS operation is only available when the system is configured for a TAWS-A installation.

Manual System Test

- 1) While the TAWS-A Page is displayed, press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select 'Test TAWS System'.
- 3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS-A Page.

When all is in working order, "TAWS System Test, OK" is heard.

Displaying the TAWS-A Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the TAWS-A Page.
- 3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.
- 4) Rotate the **Joystick** clockwise to increase the display range or rotate counter-clockwise to decrease the display range.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Enable/Disable Aviation Data

- 1) While the TAWS-A Page is displayed, press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".
- 3) Press the **ENT** Key.

Inhibiting/Enabling FLTA and PDA Alerting

- 1) Select the TAWS-A Page.
- 2) Press the **TAWS INH** Softkey to inhibit or enable TAWS-A (choice dependent on current state).

Overriding Flaps-based FIT Alerting

- 1) Select the TAWS-A Page.
- 2) Press the **FLAP OVR** Softkey.

Inhibiting/Enabling GPWS Alerting

- 1) Select the TAWS-A Page.
- 2) Press the **GPWS INH** Softkey to inhibit or enable GPWS alerts (choice dependent on current state).

Inhibiting/Enabling GSD Alerting



NOTE: Only available during a GSD alert.

On the PFD, press the **GS INH** or **GP INH** Softkey (only displayed during a GSD alert) to inhibit or enable GSD alerts (softkey choice dependent on present GSD alert type).

TAWS-B



WARNING: The TAWS display shows supplemental information only. It should not be used for navigation.



NOTE: Terrain data is not displayed when the aircraft latitude is greater than 75 degrees north or 60 degrees south.



NOTE: TAWS operation is only available when the system is configured for a TAWS-B installation.

Manual System Test

- 1) While the TAWS-B Page is displayed, press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select 'Test TAWS System'.
- 3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS-B Page.

When all is in working order, "TAWS System Test, OK" is heard.

Display Terrain and Obstacles on the TAWS-B Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the TAWS-B Page.
- 3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.
- 4) Rotate the **Joystick** clockwise to increase the display range or rotate counter-clockwise to decrease the display range.

Color	Terrain/Obstacle Location
Red	Terrain/Obstacle above or within 100' below current aircraft altitude.
Yellow	Terrain/Obstacle between 100' and 1000' below current aircraft altitude.
Black	Terrain/Obstacle is more than 1000' below aircraft altitude.

Enable/Disable Aviation Data

- 1) While the TAWS-B Page is displayed, press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".
- 3) Press the **ENT** Key.

TAWS Inhibit



NOTE: If TAWS alerts are inhibited when the Final Approach Fix is the active waypoint in a GPS WAAS approach, a LOW ALT annunciation may appear on the PFD next to the altimeter if the current aircraft altitude is at least 164 feet below the prescribed altitude at the Final Approach Fix.

Inhibit TAWS

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

Or:

- 1) Press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select 'Inhibit TAWS'.
- 3) Press the **ENT** Key.

Enable TAWS

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

Or:

- 1) While the TAWS-B Page is displayed, press the **MENU** Key.
- 2) Turn the small **FMS** Knob to select 'Enable TAWS'.
- 3) Press the **ENT** Key.

Displaying Terrain and Obstacles on the Navigation Map

- 1) With the Navigation Map displayed, press the **MAP** Softkey.
- 2) Select the **TERRAIN** Softkey. Terrain and obstacles will now be displayed on the map.

AIRBORNE COLOR WEATHER RADAR



WARNING: Begin transmitting only when it is safe to do so. If it is desired to transmit while the aircraft is on the ground, no personnel or objects should be within 11 feet of the antenna.



CAUTION: In Standby Mode, the antenna is parked at the center line. It is always a good idea to put the radar in Standby Mode before taxiing the aircraft to prevent the antenna from bouncing on the bottom stop and possibly causing damage to the radar assembly.

Displaying Weather on the Weather Radar Page

- 1) Turn the large **FMS** Knob to select the Map Page Group.
- 2) Turn the small **FMS** Knob to select the Weather Radar Page.
- 3) Select the **MODE** Softkey.
- 4) If the aircraft is on the ground, select the **STANDBY** Softkey to initiate the one minute warm-up period. After the warm-up is complete, the radar will enter the Standby Mode. After the aircraft is airborne, select the **WEATHER** Softkey.

Or:

If the aircraft is already airborne, select the **WEATHER** or **GROUND** Softkey. The one-minute warm-up period will be initiated, after which the radar will begin transmitting. The horizontal scan is initially displayed.

- 5) Turn the **Joystick** to select the desired range.
- 6) If desired, select the **VERTICAL** Softkey for vertical scanning.

Adjusting Antenna Tilt

Move the **Joystick** up or down to adjust the tilt of the antenna up or down. Monitor the displayed tilt value in the TILT field.

When scanning vertically, a Tilt Line may be displayed to aid in positioning the tilt of the antenna. If the Tilt Line is not displayed, perform the following steps:

- 1) Press the **MENU** Key
- 2) Turn the large **FMS** Knob to select 'Show Tilt Line'.
- 3) Press the **ENT** Key.

Adjusting Antenna Bearing

Move the **Joystick** right or left to adjust the azimuth position of the antenna right or left. Monitor the displayed bearing value in the BEARING field.

When scanning horizontally, a Bearing Line may be displayed to aid in positioning the antenna for the vertical scan. If the Bearing Line is not displayed, perform the following steps:

- 1) Press the **MENU** Key
- 2) Turn the large **FMS** Knob to select 'Show Bearing Line'.
- 3) Press the **ENT** Key.

Vertically Scan a Storm Cell

- 1) While in the Horizontal Scan view, move the **Joystick** to place the Bearing Line on the desired storm cell, or other area, to be vertically scanned.
- 2) Select the **VERTICAL** Softkey. A vertical "slice" of the selected area will now be displayed.
- 3) Move the **Joystick** right or left to move the scanned "slice" a few degrees right or left.
- 4) Turn the **Joystick** to adjust the range.
- 5) To select a new area to be vertically scanned, select the **HORIZON** Softkey to return to the Horizontal Scan view and repeat the previous steps.

Adjusting Gain



WARNING: Changing the gain in Weather Mode will cause precipitation intensity to be displayed as a color not representative of the true intensity. Remember to return the gain setting to 'Calibrated' for viewing the actual intensity of precipitation.

- 1) Select the **GAIN** Softkey to activate the cursor in the 'GAIN' field.
- 2) Turn the small **FMS** Knob to adjust the gain for the desirable level. The gain setting is visible in the gain field as a movable horizontal bar in a flashing box. The line pointer is a reference depicting the calibrated position.
- 3) Press the **FMS** Knob to remove the cursor.
- 4) Select the **GAIN** Softkey again to recalibrate the gain. 'CALIBRATED' will be displayed in the 'GAIN' field.

Ground Mapping

- 1) Select the **MODE** Softkey.
- 2) Select the **GROUND** Softkey to place the radar in Ground Map Mode.
- 3) Select the **BACK** Softkey.

Sector Scan

- 1) While in the Horizontal Scan Mode, move the **Joystick** right or left to place the Bearing Line in the desired position. The location of the Bearing Line will become the center point of the Sector Scan.
- 2) Press the **FMS** Knob to display the cursor.
- 3) Turn the large **FMS** Knob to place the cursor in the SECTOR SCAN field.
- 4) Turn the small **FMS** Knob to select FULL, 60°, 40°, or 20° scan.
- 5) If desired, readjust the Bearing Line with the **Joystick** to change the center of the Sector Scan.
- 6) Press the **FMS** Knob to remove the cursor.

Antenna Stabilization

- 1) To activate or deactivate the antenna stabilization, select the **MODE** Softkey.
- 2) Select the **STAB ON** Softkey to activate antenna stabilization or select the **STAB OFF** Softkey to deactivate. The current stabilization condition is shown in the upper right of the weather radar display.

Weather Attenuated Color Highlight (WATCH®)

To activate or deactivate the WATCH® feature, select the **WATCH** Softkey. This feature is only available in the Horizontal Scan Mode.

Weather Alert

To activate or deactivate Weather Alert, select the **WX ALRT** Softkey. Activating and deactivating will also enable or inhibit the alert on the PFD.

Automatic Standby

When the weather radar system is in the Weather or Ground Map Mode, upon landing the system will automatically switch to Standby Mode.

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

ADDITIONAL FEATURES

SYNTHETIC VISION (OPTIONAL)



WARNING: Use appropriate primary systems for navigation, and for terrain, obstacle, and traffic avoidance. SVS is intended as an aid to situational awareness only and may not provide either the accuracy or reliability upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.

Synthetic Vision System (SVS) functionality is offered as an optional enhancement to the G1000 Integrated Flight Deck.

SVS is primarily comprised of a computer-generated forward-looking, attitude aligned view of the topography immediately in front of the aircraft from the pilot's perspective. SVS information is shown on the primary flight display (PFD).

SVS offers a three-dimensional view of terrain and obstacles. Terrain and obstacles that pose a threat to the aircraft in flight are shaded yellow or red.

In addition to SVS enhancement to the PFD, the following feature enhancements have been added to the PFD:

- Pathways
- Flight Path Marker
- Horizon Heading Marks
- Terrain and Obstacle Alerting
- Three-dimensional Traffic
- Airport Signs
- Runway Display

Displaying Synthetic Terrain

- 1) Press the **PFD** Softkey.
- 2) Press the **SYN VIS** Softkey.
- 3) Press the **SYN TERR** Softkey.
- 4) Press the **BACK** Softkey to return to the previous page.

Displaying Pathways



NOTE: Pathways are not available when the cross-pointer (X-Pointer) flight director format is selected.

- 1) Press the **PFD** Softkey.
- 2) Press the **SYN VIS** Softkey.
- 3) If not already enabled, press the **SYN TERR** Softkey.
- 4) Press the **PATHWAY** Softkey.
- 5) Press the **BACK** Softkey to return to the previous page.

Displaying Heading on the Horizon

- 1) Press the **PFD** Softkey.
- 2) Press the **SYN VIS** Softkey.
- 3) If not already enabled, press the **SYN TERR** Softkey.
- 4) Press the **HRZN HDG** Softkey.
- 5) Press the **BACK** Softkey to return to the previous page.

Displaying Airport Signs

- 1) Press the **PFD** Softkey.
- 2) Press the **SYN VIS** Softkey.
- 3) If not already enabled, press the **SYN TERR** Softkey.
- 4) Press the **APTSIGNS** Softkey.
- 5) Press the **BACK** Softkey to return to the previous page.

TERMINAL PROCEDURE CHARTS



NOTE: With the availability of SafeTaxi®, ChartView, or FliteCharts® in electronic form, it is still advisable to carry another source of charts on-board the aircraft.

SafeTaxi®

SafeTaxi® is an enhanced feature that gives greater map detail as the map range is adjusted in on the airport. The airport display on the map reveals runways with numbers, taxiways identifiers, and airport landmarks including ramps, buildings,

control towers, and other prominent features. Resolution is greater at lower map ranges. The aircraft symbol provides situational awareness while taxiing.

Selecting the **DCLTR** Softkey (declutter) once removes the taxiway markings and airport identification labels. Selecting the **DCLTR** Softkey twice removes VOR station ID, the VOR symbol, and intersection names if within the airport plan view. Selecting the **DCLTR** Softkey a third time removes the airport runway layout, unless the airport in view is part of an active route structure. Selecting the **DCLTR** Softkey again cycles back to the original map detail.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams provide the pilot with situational awareness by displaying the aircraft position in relation to taxiways, ramps, runways, terminals, and services. This information should not be used by the pilot as the basis for maneuvering the aircraft on the ground. This database is updated on a 56-day cycle.

ChartView (Optional)

ChartView resembles the paper version of Jeppesen terminal procedures charts. The charts are displayed in full color with high-resolution. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

FliteCharts® (Optional)

FliteCharts® resemble the paper version of AeroNav Services terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts. Current aircraft position is not displayed on FliteCharts.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

View Charts from the Navigation Map Page

- 1) Select the **SHW CHRT** Softkey when displayed.

Or:

Move the map pointer to point to a desired point on the map and select the **SHW CHRT** Softkey.

- 2) Select the **DP, STAR, APR, WX,** and **NOTAM** softkeys to access charts for departures, arrivals, approaches, weather and NOTAMs. Note that NOTAMs are only available with ChartView.
- 3) Select the **GO BACK** Softkey to return to the previous page.

View Charts from the Active Flight Plan Page

- 1) While viewing the Active Flight Plan Page, press the **FMS** Knob to activate the cursor.
- 2) Turn the large **FMS** Knob to select the departure airport, destination airport, departure, arrival, or approach.
- 3) Select the **SHW CHRT** Softkey. The appropriate chart will be displayed, if available for the item selected.
- 4) Select the **GO BACK** Softkey to return to the previous page.

Change Day/Night View

- 1) While viewing a chart press the **MENU** Key to display the Page Menu OPTIONS.
- 2) Turn the large **FMS** Knob to highlight the 'Chart Setup' Menu Option and press the **ENT** Key.
- 3) Turn the large **FMS** Knob to move between the 'FULL SCREEN' and 'COLOR SCHEME' Options.
- 4) Turn the small **FMS** Knob to choose between the 'On' and 'Off' Full Screen Options.
- 5) Turn the small **FMS** Knob to choose between 'Day', 'Auto', and 'Night' Options.
- 6) In Auto Mode, turn the large **FMS** Knob to select the percentage field and change percentage with the small **FMS** Knob. The percentage of change is the day/night crossover point based on backlighting intensity.
- 7) Press the **FMS** Knob when finished to remove the Chart Setup Menu.

AOPA AIRPORT DIRECTORY

AOPA Airport Directory adds enhanced airport information when viewing airports on the WPT-Airport Information Page.

This database is updated four times per year. Check fly.garmin.com for the current database.

View Airport Directory Information

While viewing the WPT-Airport Information Page, if necessary, select the **INFO-1** Softkey to change the softkey label to display **INFO-2**. AOPA airport information is displayed on the right half of the display.

SATELLITE TELEPHONE COMMUNICATION (OPTIONAL)



NOTE: An account must be established to access the Iridium satellite network for voice and low speed data transmission.

Control and monitoring of telephone functions are accomplished through the AUX-TELEPHONE Page.

Viewing the Telephone Page

- 1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
- 2) Turn the small **FMS** Knob to select AUXILIARY COMMUNICATIONS.
- 3) If necessary, select the **TEL** Softkey to display the AUX-TELEPHONE Page.

Answering a Call In the Cockpit

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Select the **ANSWER** Softkey on the MFD.

Or:

While viewing the AUX-TELEPHONE Page

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Press the **MENU** Key to display the Page Menu.
- 3) Turn either **FMS** Knob to place the cursor on 'Answer Incoming Call'.
- 4) Press the **ENT** Key.

Selecting the **IGNORE** Softkey will extinguish the pop-up window and leave the call unanswered. Selecting the **TEL** Softkey will display the AUX-TELEPHONE allowing additional call information to be viewed before answering.

Muting Incoming Call Alerts

- 1) With the AUX-TELEPHONE Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
- 2) Turn either **FMS** Knob to place the cursor on 'Mute Incoming Call Alerts'.
- 3) Press the **ENT** Key. The voice alert is muted and the pop-up alert will not be displayed when an incoming call is received.

Making a Call to the Cabin

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) Select the **DIAL** Softkey on the MFD.
- 3) Press the **ENT** Key. The cursor will move from 'CABIN' to 'OK'.
- 4) Press the **ENT** Key again. The cabin phone ringing symbol will now be displayed.

To exit the call, select the **HANGUP** Softkey.

Making an External Call from the Cockpit Using the Iridium Satellite Network

- 1) Press the **TEL** Key on the appropriate audio panel.
- 2) With the AUX-Telephone Page displayed, select the **DIAL** Softkey on the MFD.
- 3) Turn the small **FMS** Knob to select 'IRIDIUM'.
- 4) Press the **ENT** Key. The cursor has now moved to the phone number entry field.
- 5) Enter the desired telephone number by selecting the number softkeys on the MFD or by pressing the numeric keys on the Control Unit.
- 6) Press the **ENT** Key. 'OK' is highlighted.
- 7) Press the **ENT** Key. The system will begin calling the number.

To exit the call, select the **HANGUP** Softkey.

Placing a Call on Hold

Select the **HOLD** Softkey on the MFD. Select the **HOLD** Softkey again to resume the call.

Transferring a Call

- 1) Select the **TRANS** Softkey on the MFD.
- 2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
- 3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
- 4) Press the **ENT** Key. 'OK' is now highlighted.
- 5) Press the **ENT** Key again to make the call.

Adding Another Phone to an Active Call

- 1) Select the **CONF** Softkey on the MFD.
- 2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
- 3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
- 4) Press the **ENT** Key. 'OK' is now highlighted.
- 5) Press the **ENT** Key again to make the call.

XM® RADIO ENTERTAINMENT (SUBSCRIPTION OPTIONAL)

The XM® Radio Page provides information and control of the audio entertainment features of the XM Satellite Radio.

Selecting the XM Radio Page

- 1) Turn the large **FMS** Knob to select the Auxiliary Page Group.
- 2) Turn the small **FMS** Knob to select the displayed AUX - XM Information Page.
- 3) Select the **RADIO** Softkey to show the XM Radio Page where audio entertainment is controlled.

Active Channel and Channel List

The Active Channel Box on the XM Radio Page displays the currently selected channel. The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category.

Selecting a Category

The Category Box of the XM Radio Page displays the currently selected category of audio.

- 1) Select the **CATGRY** Softkey on the XM Radio Page.
- 2) Select the **CAT +** and **CAT -** softkeys to cycle through the categories.

Or:

Turn the small **FMS** Knob to display the 'Categories' list. Highlight the desired category with the small **FMS** Knob.

- 3) Press the **ENT** Key.

Select an Available Channel within the Selected Category

- 1) While on the XM Radio Page, select the **CHNL** Softkey.
- 2) Select the **CH +** Softkey to move down through the list in the Channel Box, or move up the list with the **CH -** Softkey.

Or:

Press the **FMS** Knob to highlight the channel list and turn the large **FMS** Knob to scroll through the channels.

- 3) With the desired channel highlighted, press the **ENT** Key.

Entering a Channel Directly

- 1) While on the XM Radio Page, select the **CHNL** Softkey.
- 2) Select the **DIR CH** Softkey. The channel number in the Active Channel Box is highlighted.
- 3) Select the numbered softkeys located on the bottom of the display to directly select the desired channel number.
- 4) Press the **ENT** Key to activate the selected channel.

Assigning Channel Presets

Up to 15 channels from any category can be assigned a preset number.

- 1) On the XM Radio Page, with the desired channel active, select the **PRESETS** Softkey to access the first five preset channels (**PS1 - PS5**).
- 2) Select the **MORE** Softkey to access the next five channels (**PS6 – PS10**), and again to access the last five channels (**PS11 – PS15**). Selecting the **MORE** Softkey repeatedly cycles through the preset channels.
- 3) Select the **SET** Softkey.
- 4) Select any one of the (**PS1 - PS15**) softkeys to assign a number to the active channel.

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

ABNORMAL OPERATION

REVERSIONARY MODE

If the system detects a failure in the MFD, reversionary mode is entered automatically. Reversionary mode must be entered manually in the case of PFD1 or PFD2 failure. In reversionary mode, critical flight instrumentation is combined with engine instrumentation on the remaining display.

Manual activation of reversionary display mode is accomplished by pressing the **DISPLAY BACKUP** Button on the appropriate audio panel.

- **PFD1** – By pressing the **DISPLAY BACKUP** Button on the left audio panel.
- **MFD** – By pressing the **DISPLAY BACKUP** Button on the left or the right audio panel.
- **PFD2** – By pressing the **DISPLAY BACKUP** Button on the right audio panel.



NOTE: *The Cessna CitationJet Model 525 Airplane Flight Manual (AFM) always takes precedence over the information found in this section.*

ABNORMAL COM OPERATION

When a COM tuning failure is detected by the system, the emergency frequency (121.500 MHz) is automatically loaded into the active frequency field of the COM radio for which the tuning failure was detected. In the event of a failure of both PFDs, the emergency frequency (121.500 MHz) automatically becomes the active frequency on both COM radios.

AUDIO PANEL FAIL-SAFE OPERATION

If there is a failure of both Audio Panels, a fail-safe circuit connects the pilot's headset and microphone directly to the COM1 transceiver and the copilot's headset directly to the COM2 transceiver. Audio is not available on the speakers. If there is a failure of one Audio Panel, that side only has access to their respective on-side fail-safe COM.



NOTE: *Audio is not available on the speakers in case of an Audio Panel and its cross-side GIA unit simultaneous failure.*

If there is a failure of one Audio Panel, the remaining Audio Panel does not have access to the other side's COM or NAV. For example, if the pilot side Audio Panel

Flight
Instruments

fails, the copilot side Audio Panel has access to all the radios except for COM1 and NAV1. In this case, the copilot can receive the audio from NAV2 and operate COM2 for transmission/reception.

EIS

Nav/Com/
XPDR/Audio

In addition, if there is a failure of one Audio Panel, the following functions are no longer available on the failed side; NAV/ILS audio, speaker, cockpit/cockpit-passengers intercom, aural warning alerts on headset, entertainment inputs, and digital recording radio. Also, if a stereo headset is in use, and an Audio Panel fails, only the left channel will be heard in the headphones.

AFCs

HAZARD DISPLAYS WITH LOSS OF GPS POSITION

GPS Nav

If GPS position is lost, or becomes invalid, selected hazards being displayed on the Navigation Map Page are removed until GPS position is again established.



Flight
Planning

Loss of Hazard Functions with Loss of GPS Position

Procedures

UNUSUAL ATTITUDES

Hazard
Avoidance

The PFD ‘declutters’ when the aircraft enters an unusual attitude. Only the primary functions are displayed in these situations.

Additional
Features

The following information is removed from the PFD (and corresponding softkeys are disabled) when the aircraft experiences unusual attitudes:

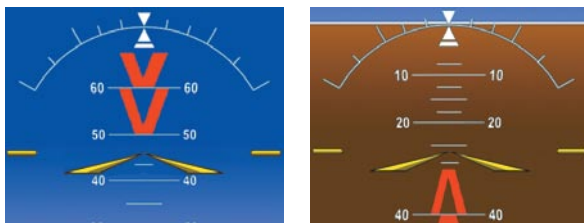
Abnormal
Operation

Annun/
Alerts

Appendix

Index

- Traffic Annunciations
- AFCS Annunciations
- Flight Director Command Bars
- Inset Map
- Temperatures
- DME Information Window
- Wind Data
- Selected Heading Box
- Selected Course Box
- Transponder Status Box
- System Time
- PFD Setup Menu
- Windows displayed in the lower right corner of the PFD:
 - Timer/References
 - Nearest Airports
 - Flight Plan
 - Messages
 - Procedures
 - ADF/DME Tuning
 - Barometric Minimum Descent Altitude Box
- Glideslope, Glide-path, and Vertical Deviation Indicators
- Altimeter Barometric Setting
- Selected Altitude
- VNV Target Altitude



Extreme Pitch Indication

DEAD RECKONING

While in Enroute or Oceanic phase of flight, if the G1000 detects an invalid GPS solution or is unable to calculate a GPS position, the system automatically reverts to Dead Reckoning (DR) Mode. In DR Mode, the G1000 uses its last-known position combined with continuously updated airspeed and heading data (when available) to calculate and display the aircraft's current estimated position.



NOTE: *Dead Reckoning Mode only functions in Enroute (ENR) or Oceanic (OCN) phase of flight. In all other phases, an invalid GPS solution produces a "NO GPS POSITION" annunciation on the map and the G1000 stops navigating in GPS Mode.*

DR Mode is indicated on the G1000 by the appearance of the letters 'DR' superimposed in yellow over the 'own aircraft' symbol as shown in the following figure. In addition, 'DR' is prominently displayed, also in yellow, on the HSI slightly above and to the right of the aircraft symbol on the CDI as shown in the following figure. The CDI deviation bar is displayed in yellow, but will be removed from the display after 20 minutes. Lastly, but at the same time, a 'GPS NAV LOST' alert message appears on the PFD.

Normal navigation using GPS/WAAS source data resumes automatically once a valid GPS solution is restored.

It is important to note that estimated navigation data supplied by the G1000 in DR Mode may become increasingly unreliable and must not be used as a sole means of navigation. If, while in DR Mode, airspeed and/or heading data is also lost or not available, the DR function may not be capable of estimating your position and, consequently, the system may display a path that is different than the actual movement of the aircraft. Estimated position information displayed by the G1000 through DR while there is no heading and/or airspeed data available should not be used for navigation.

DR Mode is inherently less accurate than the standard GPS/WAAS Mode due to the lack of satellite measurements needed to determine a position. Changes in wind speed and/or wind direction compounds the relative inaccuracy of DR Mode. Because of this degraded accuracy, the crew must maintain position awareness using other navigation equipment until GPS-derived position data is restored.



CDI 'DR' Indication on PFD



Symbolic Aircraft
(Map pages and Inset Map)

Dead Reckoning Indications

As a result of operating in DR Mode, all GPS-derived data is computed based upon an estimated position and is displayed as yellow text on the display to denote degraded navigation source information. This data includes the following:

- Navigation Status Box fields except Active Leg, TAS, and DTK
- GPS Bearing Pointer
- Wind data and pointers in the Wind Data Box on the PFD
- Current Track Indicator
- All Bearing Pointer Distances
- Active Flight Plan distances, bearings, and ETE values

Also, while the G1000 is in DR Mode, the autopilot will couple to GPS for up to 20 minutes. TAWS is also disabled. Additionally, the accuracy of all nearest information (airports, airspaces, and waypoints) is questionable. Finally, airspace alerts continue to function, but with degraded accuracy.

ANNUNCIATIONS & ALERTS

ADVISORY ANNUNCIATIONS

Annunciation Window Text	Alerts Window Text
AVN FAN 1 FAIL	Avionics cooling fan #1 is inoperative.
AVN FAN 2 FAIL	Avionics cooling fan #2 is inoperative.
PFD 1 FAN FAIL	PFD #1 cooling fan is inoperative.
PFD 2 FAN FAIL	PFD #2 cooling fan is inoperative.
MFD FAN FAIL	MFD cooling fan is inoperative..
NOSE FAN FAIL	Nose avionics cooling fan is inoperative..
PANEL FAN FAIL	Instrument panel avionics cooling fan is inoperative..

MESSAGE ADVISORY ALERTS

Alerts Window Message
WOW FAULT – Miscompare between weight on wheels inputs.
WOW INVALID – Weight on wheels inputs invalid from GIA.
TAWS GEAR FAULT – Landing gear detected in the down position.
TAWS FLAP FAULT – Flaps detected in the landing position.

COMPARATOR ANNUNCIATIONS

Note that operating the system in the vicinity of metal buildings or other metal structures can cause sensor differences that may result in nuisance miscompare annunciations during start up, shut down, or while taxiing.

Comparator Window Text	Condition
ALT MISCOMP	Difference in altitude sensors is ≥ 200 ft.
IAS MISCOMP	If both airspeed sensors detect < 35 knots, this is inhibited.
	If either airspeed sensor detects ≥ 35 knots, and the difference in sensors is > 15 kts.
	If either airspeed sensor detects ≥ 80 knots, and the difference in sensors is > 10 kts.

Comparator Window Text	Condition
HDG MISCOMP	Difference in heading sensors is > 10 degrees.
PIT MISCOMP	Difference in pitch sensors is > 5 degrees.
ROL MISCOMP	Difference in roll sensors is > 6 degrees.
ALT NO COMP	No data from one or both altitude sensors.
IAS NO COMP	No data from one or both airspeed sensors.
HDG NO COMP	No data from one or both heading sensors.
PIT NO COMP	No data from one or both pitch sensors.
ROL NO COMP	No data from one or both roll sensors..

REVERSIONARY SENSOR ANNUNCIATIONS

Reversionary Sensor Window Text	Condition
BOTH ON ADC1	Both PFDs are displaying data from the number one Air Data Computer.
BOTH ON ADC2	Both PFDs are displaying data from the number two Air Data Computer.
BOTH ON AHRS1	Both PFDs are displaying data from the number one Attitude & Heading Reference System.
BOTH ON AHRS2	Both PFDs are displaying data from the number two Attitude & Heading Reference System.
BOTH ON GPS1	Both PFDs are displaying data from the number one GPS receiver.
BOTH ON GPS2	Both PFDs are displaying data from the number two GPS receiver.
USING ADC1	PFD2 is displaying data from the #1 Air Data Computer.
USING ADC2	PFD1 is displaying data from the #2 Air Data Computer.
USING AHRS1	PFD2 is displaying data from the #1 AHRS.
USING AHRS2	PFD1 is displaying data from the #2 AHRS.
USING GPS1	PFD2 is displaying data from the #1 GPS.
USING GPS2	PFD1 is displaying data from the #2 GPS.

TAWS-A ALERTS

Alert Type	PFD/MFD TAWS-A Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up"
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"<whoop><whoop> Pull Up"
Excessive Closure Rate Warning (ECR)	PULL UP	PULL-UP	"<whoop><whoop> Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain; Caution, Terrain"
Imminent Terrain Impact Caution (ITI)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain; Caution, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle; Caution, Obstacle"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle; Caution, Obstacle"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Excessive Closure Rate Caution (ECR)	TERRAIN	TERRAIN	"Terrain, Terrain"
Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK	"Don't Sink"
Flight Into Terrain High Speed Caution (FIT)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Flight Into Terrain Gear Caution (FIT)	TERRAIN	TOO LOW - GEAR	"Too Low, Gear"
Flight Into Terrain Flaps Caution (FIT)	TERRAIN	TOO LOW - FLAPS	"Too Low, Flaps"

Alert Type	PFD/MFD TAWS-A Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Flight Into Terrain Takeoff Caution (FIT)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Glide Slope/Glide Path Deviation Caution (GSD) (depends on approach type)	GLIDESLOPE or GLIDEPATH	GLIDESLOPE or GLIDEPATH	"Glide Slope" or "Glide Path"
Altitude Voice Callout (VCO)	None	None	"Five-Hundred" "Four-Hundred" (optional) "Three-Hundred" (optional) "Two-Hundred" (optional) "One-Hundred" (optional)

TAWS-A System Status Annunciations

Alert Type	PFD/MFD TAWS-A Page Annunciation	Additional TAWS-A Page Annunciation	Aural Message
TAWS System Fail	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
GPWS System Fail	GPWS FAIL	None	"GPWS System Failure"
System Test in progress	TAWS TEST	TAWS TEST	None
System Test pass	None	None	"TAWS System Test OK"
Terrain or Obstacle database unavailable, invalid software configuration, or audio unavailable.	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
GPWS System Fail, Radar Altimeter invalid, Altitude or Vertical Speed unavailable	GPWS FAIL	None	"GPWS System Failure"
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None

Alert Type	PFD/MFD TAWS-A Page Annunciation	Additional TAWS-A Page Annunciation	Aural Message
No GPS position	TAWS N/A	NO GPS POSITION	"TAWS Not Available"
Excessively degraded GPS signal or out of database coverage area	TAWS N/A	None	"TAWS Not Available"

TAWS-A Alert Availability

TAWS-A Status Annunciation Displayed	TAWS-A Alert Type Available											
	RTC	ITI	ROC	IOI	PDA	EDR	ECR	NCR	FIT	GSD	VCO	
TAWS TEST	No	No	No	No	No	No	No	No	No	No	No	
TAWS N/A	No	No	No	No	No	Yes	Yes	Yes	Yes	*Yes	**Yes	
TAWS FAIL	No	No	No	No	No	Yes	Yes	Yes	Yes	*Yes	**Yes	
TAWS INH	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
GPWS FAIL	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	**Yes	
GS INH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
GP INH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
FLAP OVR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	#Yes	Yes	Yes	

- * Alert available unless GPS signal is invalid or unavailable.
- ** VCO alerts are not issued if both TAWS and GPWS systems have failed or are not available.
- # Only the portions of FIT Alerting based on flap position are disabled when FLAP OVR annunciation is displayed.

TAWS-B ALERTS

Alert Type	PFD/MFD TAWS-B Page Annunciation	MFD Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR)	PULL UP	PULL-UP	"Pull Up"
Reduced Required Terrain Clearance Warning (RTC)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up"
Imminent Terrain Impact Warning (ITI)	PULL UP	TERRAIN - PULL-UP	"Terrain, Terrain; Pull Up, Pull Up"
Reduced Required Obstacle Clearance Warning (ROC)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up"
Imminent Obstacle Impact Warning (IOI)	PULL UP	OBSTACLE - PULL-UP	"Obstacle, Obstacle; Pull Up, Pull Up"
Reduced Required Terrain Clearance Caution (RTC)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain; Caution, Terrain"
Imminent Terrain Impact Caution (ITI)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain; Caution, Terrain"
Reduced Required Obstacle Clearance Caution (ROC)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle; Caution, Obstacle"
Imminent Obstacle Impact Caution (IOI)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle; Caution, Obstacle"
Premature Descent Alert Caution (PDA)	TERRAIN	TOO LOW - TERRAIN	"Too Low, Terrain"
Altitude Callout "500"	None	None	"Five-Hundred"
Excessive Descent Rate Caution (EDR)	TERRAIN	SINK RATE	"Sink Rate"
Negative Climb Rate Caution (NCR)	TERRAIN	DON'T SINK	"Don't Sink"

TAWS-B System Status Annunciations

Alert Type	PFD/MFD Alert Annunciation	TAWS-B Page Annunciation	Aural Message
System Test in Progress	TAWS TEST	TAWS TEST	None
System Test Pass	None	None	"TAWS System Test OK"
TAWS Alerting is disabled	TAWS INH	None	None
MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases	None	TERRAIN DATABASE FAILURE	None
TAWS-B System Test Fail	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
Terrain or Obstacle database unavailable or invalid, invalid software configuration, system audio fault	TAWS FAIL	TAWS FAIL	"TAWS System Failure"
No GPS position	TAWS N/A	NO GPS POSITION	"TAWS Not Available"
Excessively degraded GPS signal, Out of database coverage area	TAWS N/A	None	"TAWS Not Available"
Sufficient GPS signal received after loss	None	None	"TAWS Available"

AURAL ALERTS

Aural Alert	Description
"Minimums, minimums"	The aircraft has descended below the preset minimum descent altitude or decision altitude.
"Vertical track"	The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled.
"Traffic"	The Traffic Information Service (TIS) has issued a Traffic Advisory alert
"TIS not available"	The aircraft is outside the Traffic Information Service (TIS) coverage area (not available when a TAS system is installed).

AFCS ALERTS

Condition	Annunciation	Description
Pitch Failure		Pitch axis control failure. AP is inoperative.
Roll Failure		Roll axis control failure. AP is inoperative.
MET Switch Stuck, or Pitch Trim Axis Control Failure		If annunciated when AP is engaged, take control of the aircraft and disengage the autopilot. If annunciated when AP is not engaged, move each half of the MET switch separately to check if a stuck switch is causing the annunciation.
Yaw Damper Failure		YD control failure; AP also inoperative
System Failure		AP and MET are unavailable. FD may still be available.
Elevator Mistrim Up		A condition has developed causing the pitch servo to provide a sustained force. Be prepared to apply nose up control wheel force upon autopilot disconnect.
Elevator Mistrim Down		A condition has developed causing the pitch servo to provide a sustained force. Be prepared to apply nose down control wheel force upon autopilot disconnect.
Aileron Mistrim Left		A condition has developed causing the roll servo to provide a sustained left force. Ensure the slip/skid indicator is centered and observe any maximum fuel imbalance limits.
Aileron Mistrim Right		A condition has developed causing the roll servo to provide a sustained right force. Ensure the slip/skid indicator is centered and observe any maximum fuel imbalance limits.
Rudder Mistrim Left		A condition has developed causing the yaw servo to provide a sustained force. Ensure the slip/skid indicator is centered and observe any maximum fuel imbalance limits.
Rudder Mistrim Right		A condition has developed causing the yaw servo to provide a sustained force. Ensure the slip/skid indicator is centered and observe any maximum fuel imbalance limits.
Preflight Test		Performing preflight system test. Upon completion of the test, the aural alert will be heard.
		Preflight system test has failed.

FLIGHT PLAN IMPORT/EXPORT MESSAGES

In some circumstances, some messages may appear in conjunction with others.

Flight Plan Import/Export Results	Description
'Flight plan successfully imported.'	A flight plan file stored on the SD card was successfully imported as a stored flight plan.
'File contained user waypoints only. User waypoints imported successfully. No stored flight plan data was modified.'	The file stored on the SD card did not contain a flight plan, only user waypoints. These waypoints have been saved to the system user waypoints. No flight plans stored in the system have been modified.
'No flight plan files found to import.'	The SD card contains no flight plan data.
'Flight plan import failed.'	Flight plan data was not successfully imported from the SD card.
'Flight plan partially imported.'	Some flight plan waypoints were successfully imported from the SD card, however others had errors and were not imported. A partial stored flight plan now exists in the system.
'File contained user waypoints only.'	The file stored on the SD card did not contain a flight plan, only user waypoints. One or more of these waypoints did not import successfully.
'Too many points. Flight plan truncated.'	The flight plan on the SD card contains more waypoints than the system can support. The flight plan was imported with as many waypoints as possible.
'Some waypoints not loaded. Waypoints locked.'	The flight plan on the SD card contains one or more waypoints that the system cannot find in the navigation database. The flight plan has been imported, but must be edited within the system before it can be activated for use.
'User waypoint database full. Not all loaded.'	The flight plan file on the SD card contains user waypoints. The quantity of stored user waypoints has exceeded system capacity, therefore not all the user waypoints on the SD card have been imported. Any flight plan user waypoints that were not imported are locked in the flight plan. The flight plan must be edited within the system before it can be activated for use.
'One or more user waypoints renamed.'	One or more imported user waypoints were renamed when imported due to naming conflicts with waypoints already existing in the system.
'Flight plan successfully exported.'	The stored flight plan was successfully exported to the SD card.
'Flight plan export failed.'	The stored flight plan was not successfully exported to the SD card. The SD card may not have sufficient available memory or the card may have been removed prematurely.

MFD & PFD MESSAGE ADVISORIES

Message	Comments
DATA LOST – Pilot stored data was lost. Recheck settings.	The pilot profile data was lost. System reverts to default pilot profile and settings. The pilot may reconfigure the MFD & PFDs with preferred settings, if desired.
XTALK ERROR – A flight display crosstalk error has occurred.	The MFD and PFDs are not communicating with each other. The system should be serviced.
PFD1 SERVICE – PFD1 needs service. Return unit for repair.	The PFD and/or MFD self-test has detected a problem. The system should be serviced.
PFD2 SERVICE – PFD2 needs service. Return unit for repair.	
MFD1 SERVICE – MFD1 needs service. Return unit for repair.	
MANIFEST – PFD1 software mismatch, communication halted.	The PFD and/or MFD has incorrect software installed. The system should be serviced.
MANIFEST – PFD2 software mismatch, communication halted.	
MANIFEST – MFD1 software mismatch, communication halted.	
PFD1 CONFIG – PFD1 config error. Config service req'd.	The PFD configuration settings do not match backup configuration memory. The system should be serviced.
PFD2 CONFIG – PFD2 config error. Config service req'd.	
MFD1 CONFIG – MFD1 config error. Config service req'd.	The MFD configuration settings do not match backup configuration memory. The system should be serviced.
SW MISMATCH – GDU software version mismatch. Xtalk is off.	The MFD and PFDs have different software versions installed. The system should be serviced.

MFD & PFD MESSAGE ADVISORIES (CONT.)

Message	Comments
PFD1 COOLING – PFD1 has poor cooling. Reducing power usage.	The PFD and/or MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced.
PFD2 COOLING – PFD2 has poor cooling. Reducing power usage.	
MFD1 COOLING – MFD1 has poor cooling. Reducing power usage.	
PFD1 KEYSTK – PFD1 [key name] Key is stuck.	A key is stuck on the PFD and/or MFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.
PFD2 KEYSTK – PFD2 [key name] Key is stuck.	
MFD1 KEYSTK – MFD [key name] Key is stuck.	
CNFG MODULE – PFD1 configuration module is inoperative.	The PFD1 configuration module backup memory has failed. The system should be serviced.
PFD1 VOLTAGE – PFD1 has low voltage. Reducing power usage	The PFD1 voltage is low. The system should be serviced.
PFD2 VOLTAGE – PFD2 has low voltage. Reducing power usage	The PFD2 voltage is low. The system should be serviced.
MFD1 VOLTAGE – MFD1 has low voltage. Reducing power usage	The MFD voltage is low. The system should be serviced.

DATABASE MESSAGE ADVISORIES

Message	Comments
MFD1 DB ERR – MFD1 navigation database error exists.	The MFD and/or PFD detected a failure in the navigation database. Attempt to reload the navigation database. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 navigation database error exists.	
PFD2 DB ERR – PFD2 navigation database error exists.	

DATABASE MESSAGE ADVISORIES (CONT.)

Message	Comments
MFD1 DB ERR – MFD1 basemap database error exists.	The MFD and/or PFD detected a failure in the basemap database.
PFD1 DB ERR – PFD1 basemap database error exists.	
PFD2 DB ERR – PFD2 basemap database error exists.	
MFD1 DB ERR – MFD1 terrain database error exists.	The MFD and/or PFD detected a failure in the terrain database. Ensure that the terrain card is properly inserted in display. Replace terrain card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 terrain database error exists.	
PFD2 DB ERR – PFD2 terrain database error exists.	
MFD1 DB ERR – MFD1 terrain database missing.	The terrain database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 terrain database missing.	
PFD2 DB ERR – PFD2 terrain database missing.	
MFD1 DB ERR – MFD1 obstacle database error exists.	The MFD and/or PFD detected a failure in the obstacle database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 obstacle database error exists.	
PFD2 DB ERR – PFD2 obstacle database error exists.	
MFD1 DB ERR – MFD1 obstacle database missing.	The obstacle database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 obstacle database missing.	
PFD2 DB ERR – PFD2 obstacle database missing.	

DATABASE MESSAGE ADVISORIES (CONT.)

Message	Comments
MFD1 DB ERR – MFD1 airport terrain database error exists.	The MFD and/or PFD detected a failure in the airport terrain database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 airport terrain database error exists.	
PFD2 DB ERR – PFD2 airport terrain database error exists.	
MFD1 DB ERR – MFD1 airport terrain database missing.	The airport terrain database is present on another LRU, but is missing on the specified LRU.
PFD1 DB ERR – PFD1 airport terrain database missing.	
PFD2 DB ERR – PFD2 airport terrain database missing.	
MFD1 DB ERR – MFD1 Safe Taxi database error exists.	The MFD and/or PFD detected a failure in the Safe Taxi database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
PFD1 DB ERR – PFD1 Safe Taxi database error exists.	
PFD2 DB ERR – PFD2 Safe Taxi database error exists.	
MFD1 DB ERR – MFD1 Chartview database error exists.	The MFD detected a failure in the ChartView database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 FliteCharts database error exists.	The MFD detected a failure in the FliteCharts database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.
MFD1 DB ERR – MFD1 Airport Directory database error exists.	The MFD detected a failure in the Airport Directory database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced.

DATABASE MESSAGE ADVISORIES (CONT.)

Message	Comments
DB MISMATCH – Navigation database mismatch. Xtalk is off.	The PFDs and MFD have different navigation database versions or types (Americas, European, etc.) installed. Crossfill is off. Install correct navigation database version or type in all displays.
DB MISMATCH – Terrain database mismatch.	The PFDs and MFD have different terrain database versions or types installed. Install correct terrain database version or type in all displays.
DB MISMATCH – Obstacle database mismatch.	The PFDs and MFD have different obstacle database installed. Install correct obstacle database in all displays.
DB MISMATCH – Airport Terrain database mismatch.	The PFDs and MFD have different airport terrain databases installed. Install correct airport terrain database in all displays.
NAV DB UPDATED – Active navigation database updated.	System has updated the active navigation database from the standby navigation database.
TERRAIN DSP – [PFD1, PFD2 or MFD1] Terrain awareness display unavailable.	One of the terrain, airport terrain, or obstacle databases required for TAWS in the specified PFD or MFD is missing or invalid.

GMA 1347D-20 MESSAGE ADVISORIES

Message	Comments
GMA1 FAIL – GMA1 is inoperative.	The audio panel self-test has detected a failure. The audio panel is unavailable. The system should be serviced.
GMA2 FAIL – GMA2 is inoperative.	
GMA XTALK – GMA crosstalk error has occurred.	An error has occurred in transferring data between the two GMAs. The system should be serviced.

GMA 1347D-20 MESSAGE ADVISORIES (CONT.)

Message	Comments
GMA1 CONFIG – GMA1 config error. Config service req'd.	The audio panel configuration settings do not match backup configuration memory. The system should be serviced.
GMA2 CONFIG – GMA2 config error. Config service req'd.	
MANIFEST – GMA1 software mismatch, communication halted.	The audio panel has incorrect software installed. The system should be serviced.
MANIFEST – GMA2 software mismatch, communication halted.	
GMA1 SERVICE – GMA1 needs service. Return unit for repair.	The audio panel self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio panel may still be usable. The system should be serviced when possible.
GMA2 SERVICE – GMA2 needs service. Return unit for repair.	

GIA 63W MESSAGE ADVISORIES

Message	Comments
GIA1 CONFIG – GIA1 config error. Config service req'd.	The GIA1 and/or GIA2 configuration settings do not match backup configuration memory. The system should be serviced.
GIA2 CONFIG – GIA2 config error. Config service req'd.	
GIA1 CONFIG – GIA1 audio config error. Config service req'd.	The GIA1 and/or GIA2 have an error in the audio configuration. The system should be serviced.
GIA2 CONFIG – GIA2 audio config error. Config service req'd.	
GIA1 COOLING – GIA1 temperature too low.	The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature.
GIA2 COOLING – GIA2 temperature too low.	
GIA1 COOLING – GIA1 over temperature.	The GIA1 and/or GIA2 temperature is too high. If problem persists, the system should be serviced.
GIA2 COOLING – GIA2 over temperature.	

GIA 63W MESSAGE ADVISORIES (CONT.)

Message	Comments
GIA1 SERVICE – GIA1 needs service. Return the unit for repair.	The GIA1 and/or GIA2 self-test has detected a problem in the unit. The system should be serviced.
GIA2 SERVICE – GIA2 needs service. Return the unit for repair.	
HW MISMATCH – GIA hardware mismatch. GIA1 communication halted.	A GIA mismatch has been detected, where only one is WAAS capable.
HW MISMATCH – GIA hardware mismatch. GIA2 communication halted.	
MANIFEST – GIA1 software mismatch, communication halted.	The GIA1 and/or GIA 2 has incorrect software installed. The system should be serviced.
MANIFEST – GIA2 software mismatch, communication halted.	
MANIFEST – GFC software mismatch, communication halted.	Incorrect servo software is installed, or gain settings are incorrect.
COM1 TEMP – COM1 over temp. Reducing transmitter power.	The system has detected an over temperature condition in COM1 and/or COM2. The transmitter is operating at reduced power. If the problem persists, the system should be serviced.
COM2 TEMP – COM2 over temp. Reducing transmitter power.	
COM1 SERVICE – COM1 needs service. Return unit for repair.	The system has detected a failure in COM1 and/or COM2. COM1 and/or COM2 may still be usable. The system should be serviced when possible.
COM2 SERVICE – COM2 needs service. Return unit for repair.	
COM1 PTT – COM1 push-to-talk key is stuck.	The COM1 and/or COM2 external push-to-talk switch is stuck in the enable (or “pressed”) position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 PTT – COM2 push-to-talk key is stuck.	
COM1 RMT XFR – COM1 remote transfer key is stuck.	The COM1 and/or COM2 transfer switch is stuck in the enabled (or “pressed”) position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
COM2 RMT XFR – COM2 remote transfer key is stuck.	

GIA 63W MESSAGE ADVISORIES (CONT.)

Message	Comments
LOI – GPS integrity lost. Crosscheck with other NAVS.	GPS integrity is insufficient for the current phase of flight.
GPS NAV LOST – Loss of GPS navigation. Insufficient satellites.	Loss of GPS navigation due to insufficient satellites.
GPS NAV LOST – Loss of GPS navigation. Position error.	Loss of GPS navigation due to position error.
GPS NAV LOST – Loss of GPS navigation. GPS fail.	Loss of GPS navigation due to GPS failure.
ABORT APR – Loss of GPS navigation. Abort approach.	Abort approach due to loss of GPS navigation.
APR DWNGRADE – Approach downgraded.	Vertical guidance generated by WAAS is unavailable, use LNAV only minimums.
TRUE APR – True north approach. Change HDG reference to TRUE.	Displayed after passing the first waypoint of a true north approach when the nav angle is set to 'AUTO'.
GPS1 SERVICE – GPS1 needs service. Return unit for repair.	A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver may still be available. The system should be serviced.
GPS2 SERVICE – GPS2 needs service. Return unit for repair.	
NAV1 SERVICE – NAV1 needs service. Return unit for repair.	A failure has been detected in the NAV1 and/or NAV2 receiver. The receiver may still be available. The system should be serviced.
NAV2 SERVICE – NAV2 needs service. Return unit for repair.	
NAV1 RMT XFR – NAV1 remote transfer key is stuck.	The remote NAV1 and/or NAV2 transfer switch is stuck in the enabled (or "pressed") state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced.
NAV2 RMT XFR – NAV2 remote transfer key is stuck.	
G/S1 FAIL – G/S1 is inoperative.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The system should be serviced.
G/S2 FAIL – G/S2 is inoperative.	

GIA 63W MESSAGE ADVISORIES (CONT.)

Message	Comments
G/S1 SERVICE – G/S1 needs service. Return unit for repair.	A failure has been detected in glideslope receiver 1 and/or receiver 2. The receiver may still be available. The system should be serviced when possible.
G/S2 SERVICE – G/S2 needs service. Return unit for repair.	

GEA 71 MESSAGE ADVISORIES

Message	Comments
GEA1 CONFIG – GEA1 config error. Config service req'd.	The GEA1 configuration settings do not match those of backup configuration memory. The system should be serviced.
GEA2 CONFIG – GEA2 config error. Config service req'd.	The GEA2 configuration settings do not match those of backup configuration memory. The system should be serviced.
MANIFEST – GEA1 software mismatch, communication halted.	The #1 GEA 71 has incorrect software installed. The system should be serviced.
MANIFEST – GEA2 software mismatch, communication halted.	The #2 GEA 71 has incorrect software installed. The system should be serviced.

GTX 33/33D MESSAGE ADVISORIES

Message	Comments
XPDR1 CONFIG – XPDR1 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The system should be serviced.
XPDR2 CONFIG – XPDR2 config error. Config service req'd.	The transponder configuration settings do not match those of backup configuration memory. The system should be serviced.
MANIFEST – GTX1 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.
MANIFEST – GTX2 software mismatch, communication halted.	The transponder has incorrect software installed. The system should be serviced.

GTX 33/33D MESSAGE ADVISORIES (CONT.)

Message	Comments
XPDR1 SRVC – XPDR1 needs service. Return unit for repair.	The #1 transponder should be serviced when possible.
XPDR2 SRVC – XPDR2 needs service. Return unit for repair.	The #2 transponder should be serviced when possible.
XPDR1 FAIL – XPDR1 is inoperative.	There is no communication with the #1 transponder.
XPDR2 FAIL – XPDR2 is inoperative.	There is no communication with the #2 transponder.

GRS 77 MESSAGE ADVISORIES

Message	Comments
AHRS1 TAS – AHRS1 not receiving valid airspeed.	The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS2 TAS – AHRS2 not receiving valid airspeed.	The #2 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced.
AHRS1 GPS – AHRS1 using backup GPS source.	The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS2 GPS – AHRS2 using backup GPS source.	The #2 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible.
AHRS1 GPS – AHRS1 not receiving any GPS information.	The #1 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.
AHRS2 GPS – AHRS2 not receiving any GPS information.	The #2 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced.

GRS 77 MESSAGE ADVISORIES (CONT.)

Message	Comments
AHRS1 GPS – AHRS1 not receiving backup GPS information.	The #1 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS2 GPS – AHRS2 not receiving backup GPS information.	The #2 AHRS is not receiving backup GPS information. The system should be serviced.
AHRS1 GPS – AHRS1 operating exclusively in no-GPS mode.	The #1 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS2 GPS – AHRS2 operating exclusively in no-GPS mode.	The #2 AHRS is operating exclusively in no-GPS mode. The system should be serviced.
AHRS MAG DB – AHRS magnetic model database version mismatch.	The #1 AHRS and #2 AHRS magnetic model database versions do not match.
AHRS1 SRVC – AHRS1 Magnetic-field model needs update.	The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
AHRS2 SRVC – AHRS2 Magnetic-field model needs update.	The #2 AHRS earth magnetic field model is out of date. Update magnetic field model when practical.
GEO LIMITS – AHRS1 too far North/South, no magnetic compass.	The aircraft is outside geographical limits for approved AHRS operation. Heading is flagged as invalid.
GEO LIMITS – AHRS2 too far North/South, no magnetic compass.	
MANIFEST – GRS1 software mismatch, communication halted.	The #1 AHRS has incorrect software installed. The system should be serviced.
MANIFEST – GRS2 software mismatch, communication halted.	The #2 AHRS has incorrect software installed. The system should be serviced.

GMU 44 MESSAGE ADVISORIES

Message	Comments
HDG FAULT – AHRS1 magnetometer fault has occurred.	A fault has occurred in the #1 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
HDG FAULT – AHRS2 magnetometer fault has occurred.	A fault has occurred in the #2 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced.
MANIFEST – GMU1 software mismatch, communication halted.	The GMU 44 has incorrect software installed. The system should be serviced.
MANIFEST – GMU2 software mismatch, communication halted.	

GDL 59 MESSAGE ADVISORIES

Message	Comments
GDL59 CONFIG – GDL 59 config error. Config service req'd.	GDL 59 configuration settings do not match those of backup configuration memory. The system should be serviced.
GDL59 FAIL – GDL 59 has failed.	A failure has been detected in the GDL 59. The receiver is unavailable. The system should be serviced.
GDL59 SERVICE – GDL 59 needs service. Return unit for repair.	A failure has been detected in the GDL 59. The system should be serviced.
GDL59 RTR FAIL – The GDL 59 router has failed.	A failure has been detected in the GDL 59 router. The system should be serviced.
REGISTER GFDS – Data services are inoperative, register w/GFDS.	The GDL 59 is not registered with Garmin Flight Data Services, or it's current registration data has failed authentication.
MANIFEST – GDL software mismatch, communication halted.	The GDL 59 has incorrect software installed. The system should be serviced.

GSR 56 MESSAGE ADVISORIES

Message	Comments
GSR1 FAIL – GSR1 has failed.	A failure has been detected in the #1 GSR 56. The system should be serviced.

GDL 69A MESSAGE ADVISORIES

Message	Comments
GDL69 CONFIG – GDL 69 config error. Config service req'd.	GDL 69 configuration settings do not match those of backup configuration memory. The system should be serviced.
GDL69 FAIL – GDL 69 has failed.	A failure has been detected in the GDL 69. The receiver is unavailable. The system should be serviced.
MANIFEST – GDL software mismatch, communication halted.	The GDL 69 has incorrect software installed. The system should be serviced.

GWX 68 ALERT MESSAGES

Message	Comments
GWX CONFIG – GWX config error. Config service req'd.	GWX 68 configuration settings do not match those of the GDU configuration. The system should be serviced.
GWX FAIL – GWX is inoperative.	The GDU is not receiving status packet from the GWX 68 or the GWX 68 is reporting a fault. The GWX 68 radar system should be serviced.
GWX SERVICE – GWX needs service. Return unit for repair.	A failure has been detected in the GWX 68. The GWX 68 may still be usable.
MANIFEST – GWX software mismatch, communication halted.	The GWX 68 has incorrect software installed. The system should be serviced.
WX ALERT – Possible severe weather ahead.	Possible severe weather detected within +/- 10 degrees of the aircraft heading at a range of 80 to 320 nm.

GDC 74B MESSAGE ADVISORIES

Message	Comments
ADC1 ALT EC – ADC1 altitude error correction is unavailable.	GDC1 or GDC2 is reporting that the altitude error correction is unavailable.
ADC2 ALT EC – ADC2 altitude error correction is unavailable.	
ADC1 AS EC – ADC1 airspeed error correction is unavailable.	GDC1 or GDC2 is reporting that the airspeed error correction is unavailable.
ADC2 AS EC – ADC2 airspeed error correction is unavailable.	
MANIFEST – GDC1 software mismatch, communication halted.	The GDC 74B has incorrect software installed. The system should be serviced.
MANIFEST – GDC2 software mismatch, communication halted.	

GCU 475 MESSAGE ADVISORIES

Message	Comments
GCU CNFG – GCU Config error. Config service req'd.	GCU 475 configuration settings do not match those of backup configuration memory. The system should be serviced.
GCU FAIL – GCU is inoperative.	A failure has been detected in the GCU 475. The GCU 475 is unavailable.
MANIFEST – GCU software mismatch, communication halted.	The GCU 475 has incorrect software installed. The system should be serviced.
GCU KEYSTK – GCU [key name] Key is stuck.	A key is stuck on the GCU 475 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.

GMC 710 MESSAGE ADVISORIES

Message	Comments
GMC CONFIG – GMC Config error. Config service req'd.	GMC 710 configuration settings do not match those of backup configuration memory. The system should be serviced.
GMC FAIL – GMC is inoperative.	A failure has been detected in the GMC 710. The GMC 710 is unavailable.
MANIFEST – GMC software mismatch. Communication halted.	The GMC 710 has incorrect software installed. The system should be serviced.
GMC KEYSTK – GMC [key name] Key is stuck.	A key is stuck on the GMC 710 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists.

GTS 820 MESSAGE ADVISORIES

Message	Comments
GTS CONFIG – GTS config error. Config service req'd.	The GTS and GDU have incompatible configurations. This alert is also set when the GTS has an invalid mode S address configured or the mode S address does not match both XPDR mode S addresses.
MANIFEST – GTS software mismatch, communication halted.	The GTS has incorrect software installed. The G1000 system should be serviced.

MISCELLANEOUS MESSAGE ADVISORIES

Message	Comments
FPL WPT LOCK – Flight plan waypoint is locked.	Upon power-up, the system detects that a stored flight plan waypoint is locked. This occurs when an navigation database update eliminates an obsolete waypoint. The flight plan cannot find the specified waypoint and flags this message. This can also occur with user waypoints in a flight plan that is deleted. Remove the waypoint from the flight plan if it no longer exists in any database, Or update the waypoint name/identifier to reflect the new information.
FPL WPT MOVE – Flight plan waypoint moved.	The system has detected that a waypoint coordinate has changed due to a new navigation database update. Verify that stored flight plans contain correct waypoint locations.
TIMER EXPIRD – Timer has expired.	The system notifies the pilot that the timer has expired.
DB CHANGE – Database changed. Verify user modified procedures.	This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after an navigation database update. Verify that the user-modified procedures in stored flight plans are correct and up to date.
DB CHANGE – Database changed. Verify stored airways.	This occurs when a stored flight plan contains an airway that is no longer consistent with the navigation database. This alert is issued only after an navigation database update. Verify use of airways in stored flight plans and reload airways as needed.

MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

Message	Comments
FPL TRUNC – Flight plan has been truncated.	This occurs when a newly installed navigation database eliminates an obsolete approach or arrival used by a stored flight plan. The obsolete procedure is removed from the flight plan. Update flight plan with current arrival or approach.
LOCKED FPL – Cannot navigate locked flight plan.	This occurs when the pilot attempts to activate a stored flight plan that contains locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint.
WPT ARRIVAL – Arriving at waypoint -[xxxx]	Arriving at waypoint [xxxx], where [xxxx] is the waypoint name.
STEEP TURN – Steep turn ahead.	A steep turn is 15 seconds ahead. Prepare to turn.
INSIDE ARSPC – Inside airspace.	The aircraft is inside the airspace.
ARSPC AHEAD – Airspace ahead less than 10 minutes.	Special use airspace is ahead of aircraft. The aircraft will penetrate the airspace within 10 minutes.
ARSPC NEAR – Airspace near and ahead.	Special use airspace is near and ahead of the aircraft position.
ARSPC NEAR – Airspace near – less than 2 nm.	Special use airspace is within 2 nm of the aircraft position.
APR INACTV – Approach is not active.	The system notifies the pilot that the loaded approach is not active. Activate approach when required.
SLCT FREQ – Select appropriate frequency for approach.	The system notifies the pilot to load the approach frequency for the appropriate NAV receiver. Select the correct frequency for the approach.
SLCT NAV – Select NAV on CDI for approach.	The system notifies the pilot to set the CDI to the correct NAV receiver. Set the CDI to the correct NAV receiver.
PTK FAIL – Parallel track unavailable: bad geometry.	Bad parallel track geometry.

MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

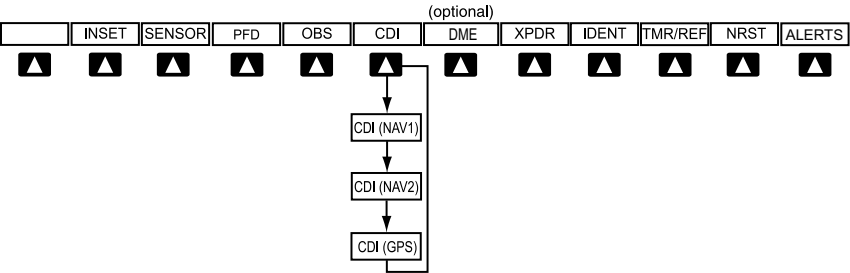
PTK FAIL – Parallel track unavailable: invalid leg type.	Invalid leg type for parallel offset.
PTK FAIL – Parallel track unavailable: past IAF.	IAF waypoint for parallel offset has been passed.
UNABLE V WPT – Can't reach current vertical waypoint.	The current vertical waypoint can not be reached within the maximum flight path angle and vertical speed constraints. The system automatically transitions to the next vertical waypoint.
VNV – Unavailable. Unsupported leg type in flight plan.	The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This prevents vertical guidance to the active vertical waypoint.
VNV – Unavailable. Excessive track angle error.	The current track angle error exceeds the limit, causing the vertical deviation to go invalid.
VNV – Unavailable. Excessive crosstrack error.	The current crosstrack exceeds the limit, causing vertical deviation to go invalid.
VNV – Unavailable. Parallel course selected.	A parallel course has been selected, causing the vertical deviation to go invalid.
TRAFFIC FAIL – Traffic device has failed.	The system is no longer receiving data from the traffic system. The traffic device should be serviced.
NO WGS84 WPT – Non WGS 84 waypoint for navigation -[xxxx]	The position of the selected waypoint [xxxx] is not calculated based on the WGS84 map reference datum and may be positioned in error as displayed. Do not use GPS to navigate to the selected non-WGS84 waypoint.
FAILED PATH – A data path has failed.	A data path connected to the GDU, GSD 41, GSD 69A, or the GIA 63/W has failed.
MAG VAR WARN – Large magnetic variance. Verify all course angles.	The GDU's internal model cannot determine the exact magnetic variance for geographic locations near the magnetic poles. Displayed magnetic course angles may differ from the actual magnetic heading by more than 2°.

MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

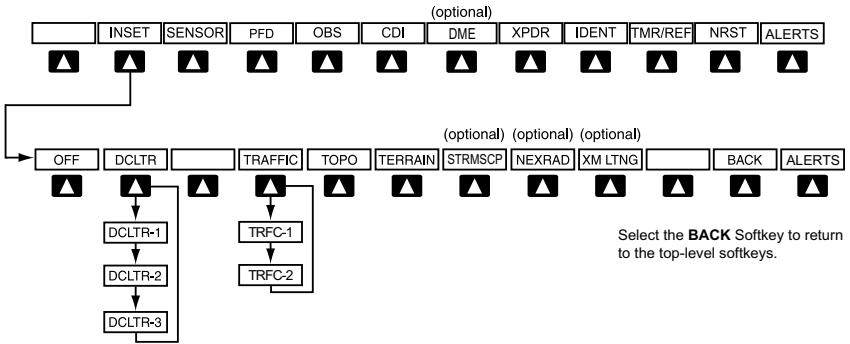
SVS – SVS DISABLED: Out of available terrain region.	Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database.
SVS – SVS DISABLED: Terrain DB resolution too low.	Synthetic Vision is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed.
SCHEDULER [#] – <message>.	Message criteria entered by the user.
CHECK CRS – Database course for LOC1 / [LOC ID] is [CRS]°.	Selected course for LOC1 differs from published localizer course by more than 10 degrees.
CHECK CRS – Database course for LOC2 / [LOC ID] is [CRS]°.	Selected course for LOC2 differs from published localizer course by more than 10 degrees.
[PFD1, PFD2, or MFD1] CARD 1 REM – Card 1 was removed. Reinsert card.	The SD card was removed from the top card slot of the specified PFD or MFD. The SD card needs to be reinserted.
[PFD1, PFD2, or MFD1] CARD 2 REM – Card 2 was removed. Reinsert card.	The SD card was removed from the bottom card slot of the specified PFD or MFD. The SD card needs to be reinserted.
[PFD1, PFD2, or MFD1] CARD 1 ERR – Card 1 is invalid.	The SD card in the top card slot of the specified PFD or MFD contains invalid data.
[PFD1, PFD2, or MFD1] CARD 2 ERR – Card 2 is invalid.	The SD card in the bottom card slot of the specified PFD or MFD contains invalid data.

APPENDIX

PFD SOFTKEY MAP



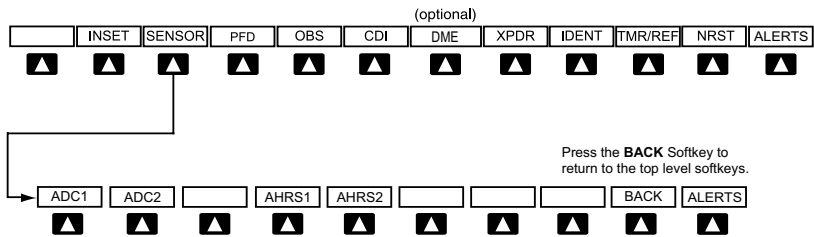
Top Level PFD Softkeys



INSET Map Softkeys

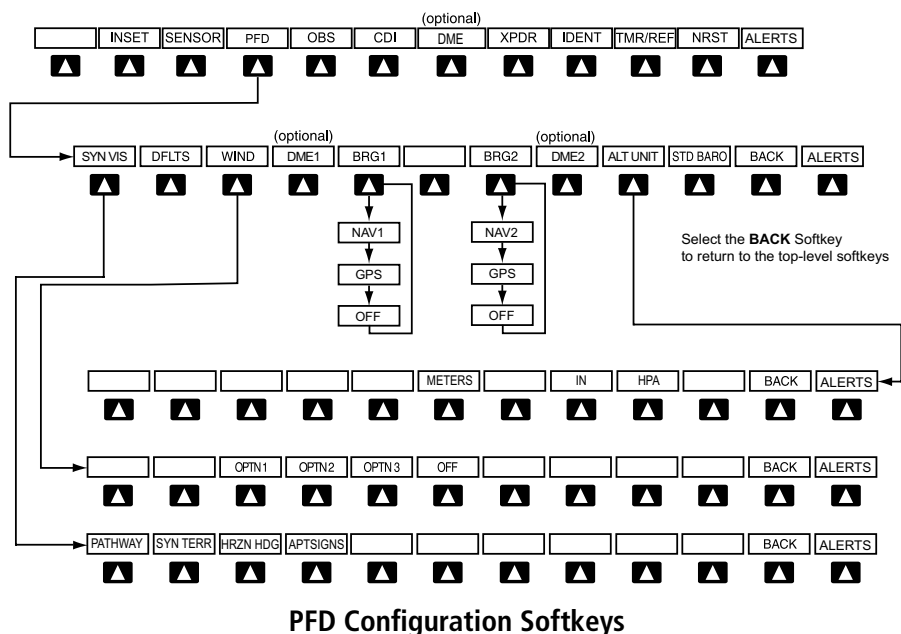
INSET		Pressing the INSET Softkey Displays Inset Map in the PFD lower left corner.
	OFF	Removes Inset Map
	DCLTR (3)	Selects desired amount of map detail; cycles through declutter levels: DCLTR (No Declutter): All map features visible DCLTR-1: Declutters land data DCLTR-2: Declutters land and SUA data DCLTR-3: Removes everything except the active flight plan

	TRAFFIC	Cycles through traffic display options: TRFC-1: Traffic displayed on inset map TRFC-2: Traffic Map Page is displayed in the inset map window
	TOPO	Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Inset Map
	TERRAIN	Displays terrain information on Inset Map (not available with TAWS-A)
	STRMSCP	Displays Stormscope data on the Inset Map (optional feature)
	NEXRAD	Displays NEXRAD weather and coverage information on Inset Map (optional feature)
	XM LTNG	Displays XM lightning information on Inset Map (optional feature)



SENSOR Softkeys

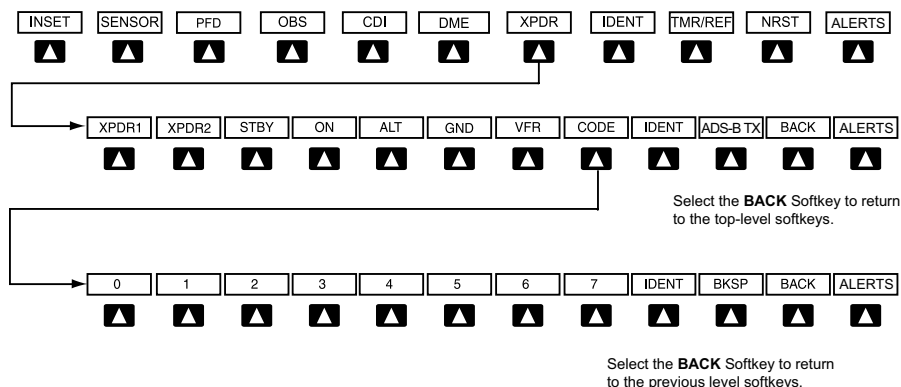
SENSOR		Displays softkeys for selecting the #1 and #2 AHRS and Air Data Computers
	ADC1	Selects the #1 Air Data Computer
	ADC2	Selects the #2 Air Data Computer
	AHRS1	Selects the #1 AHRS
	AHRS2	Selects the #2 AHRS



PFD			Displays second-level softkeys for additional PFD configurations
	SYN VIS		Displays the softkeys for enabling or disabling Synthetic Vision features
		PATHWAY	Displays rectangular boxes representing the horizontal and vertical flight path of the active flight plan
		SYN TERR	Enables synthetic terrain depiction
		HRZN HDG	Displays compass heading along the Zero-Pitch line
		APTSIGNS	Displays position markers for airports within approximately 15 nm of the current aircraft position. Airport identifiers are displayed when the airport is within approximately 9 nm.
	DFLT		Resets PFD to default settings, including changing units to standard

Flight Instruments		WIND		Displays softkeys to select wind data parameters
EIS			OPTN 1	Wind direction arrows with headwind and crosswind components
Nav/Com/XPDR/Audio			OPTN 2	Wind direction arrow and speed
AFCs			OPTN 3	Wind direction arrow with direction and speed
GPS Nav			OFF	Information not displayed
Flight Planning		DME1		Select to display the DME1 information window
Procedures		BRG1		Cycles the Bearing 1 Information Window through NAV1 or GPS/waypoint identifier and GPS-derived distance information.
Hazard Avoidance		BRG2		Cycles the Bearing 2 Information Window through NAV2 or GPS/waypoint identifier and GPS-derived distance information.
Additional Features		DME2		Select to display the DME2 information window
Abnormal Operation		ALT UNIT		Displays softkeys for setting the altimeter and BARO settings to metric units
Annun./Alerts			METERS	When enabled, displays altimeter and selected altitude in meters
Appendix			IN	Press to display the BARO setting as inches of mercury
Index			HPA	Press to display the BARO setting as hectopascals
		STD BARO		Sets barometric pressure to 29.92 in Hg (1013 hPa)
	OBS			Selects OBS mode on the CDI when navigating by GPS (only available with active leg)

CDI			Cycles through GPS, VOR1 (LOC1), and VOR2 (LOC2) navigation sources on the CDI
DME			Displays the DME Tuning Window, allowing selection of the NAV source for tuning each DME

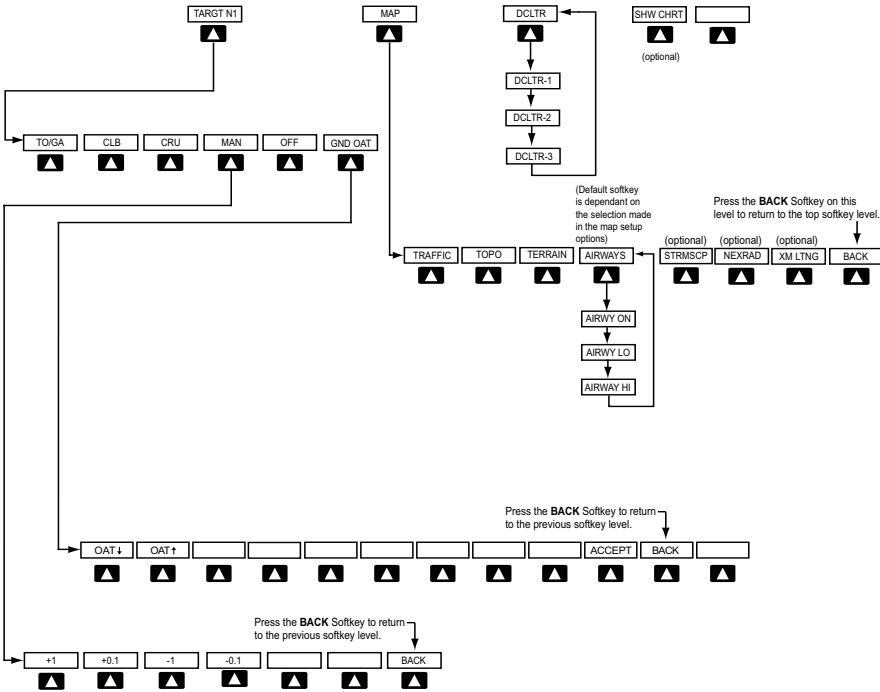


Transponder Softkeys

XPDR			Displays transponder mode selection softkeys
	XPDR1		Selects the #1 transponder as active.
	XPDR2		Selects the #2 transponder as active.
	STBY		Selects Standby Mode (transponder does not reply to any interrogations)
	ON		Selects Mode A (transponder replies to identification interrogations)
	ALT		Selects Mode C – Altitude Reporting Mode (transponder replies to identification and altitude interrogations)
	GND		Manually selects Ground Mode, the transponder does not allow Mode A and Mode C replies, but it does permit acquisition squitter and replies to discretely addressed Mode S interrogations.

Flight Instruments	VFR		Automatically enters the VFR code (1200 in the U.S.A. only).
EIS	CODE		Displays transponder code selection softkeys 0-7
Nav/Com/XPDR/Audio	IDENT		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen
AFCs	ADS-B TX		Activates/deactivates transmission of the aircraft's three-dimensional position and aircraft heading for reception by ADS-B systems.
GPS Nav		0 — 7	Use numbers to enter code
		BKSP	Removes numbers entered, one at a time
Flight Planning	IDENT		Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen
Procedures	TMR/REF		Displays Timer/References Window
	NRST		Displays Nearest Airports Window
Hazard Avoidance	ALERTS		Displays Alerts Window

MFD SOFTKEY MAP



MFD Softkeys

TARGET N1		Accesses the softkeys for selecting the target N1 thrust mode and ground Outside Air Temperature (OAT)
	TO/GA	Selects the takeoff/go around target N1 thrust mode
	CLB*	Selects maximum climb target N1 thrust mode
	CRU*	Selects maximum cruise target N1 thrust mode

Flight Instruments	MAN		Accesses the softkeys for manually setting the target N1 speed as a percentage
EIS		+1	Increases the displayed
		+0.1	Increases the displayed
Nav/Com/XPDR/Audio		-1	Decreases the displayed
		-0.1	Decreases the displayed
AFCs	OFF		Disables the target N1 speed bugs and readout
GPS Nav	GND OAT**		Accesses softkeys for setting the ground outside air temperature (OAT)
		OAT↑	Increases the ground OAT setting in one-degree Celsius (°C) increments
Flight Planning		OAT↓	Decreases the ground OAT setting in one-degree Celsius (°C) increments
Procedures		ACCEPT	Confirms the ground OAT setting and returns to the previous softkey level
	MAP		Enables second-level Navigation Map softkeys
Hazard Avoidance	TRAFFIC		Displays traffic information on Navigation Map
Additional Features	TOPO		Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Navigation Map
Abnormal Operation	TERRAIN		Displays terrain information on Navigation Map (not available with TAWS-A)
Annun/Alerts	AIRWAYS		Displays airways on the map; cycles through the following: AIRWAYS: No airways are displayed AIRWY ON: All airways are displayed AIRWY LO: Only low altitude airways are displayed AIRWY HI: Only high altitude airways are displayed

	STRMSCP		Displays Stormscope weather and coverage information on Navigation Map (optional feature)
	NEXRAD		Displays NEXRAD weather and coverage information on Navigation Map (optional feature)
	XM LTNG		Displays XM lightning information on Navigation Map (optional feature)
	BACK		Returns to top-level softkeys
DCLTR (3)			Selects desired amount of map detail; cycles through declutter levels: DCLTR (No Declutter): All map features visible DCLTR-1: Declutters land data DCLTR-2: Declutters land and SUA data DCLTR-3: Removes everything except the active flight plan
SHW CHRT			When available, displays optional airport and terminal procedure charts

* Softkey only enabled while aircraft is in the air

** Softkey only enabled while aircraft is on the ground and airspeed is below 20 kias

DATABASE UPDATES

The system uses Secure Digital (SD) cards to load and store various types of data. For basic flight operations, SD cards are required for database storage as well as Jeppesen navigation and Jeppesen ChartView database updates. Not all SD cards are compatible with the G1000. Use only SD cards supplied by Garmin or the aircraft manufacturer.

Information regarding the various databases may be viewed on the AUX-System Status Page.

17.95	AUX - SYSTEM STATUS				136.975	118.000 COM2
LRU INFO				AIRFRAME		
	STATUS	SERIAL NUMBER	VERSION	AIRFRAME Cessna Model 525 Citation Jet		
CO GUARDIAN	✓		7.00	SYS SOFTWARE VERSION 1162.00		
COM1	✓		7.00	CONFIGURATION ID CAF21CSA		
COM2	✓	27000006	2.02d	CRG PART NUMBER		
GDC1	✓	47801548	1.05	SYSTEM ID 200000000		
GDL69	✓	47801373	1.05	CHECKLIST NOT AVAILABLE		
GEA1	✓	47750372	3.02.00	MFD1 DATABASE		
GIA1	✓	46701911	2.07	VERSION 1.01		
GIA2	✓	46701913	2.07	CYCLE 0903		
GMA1	✓	FFFFFFFF	1.02	EFFECTIVE 15-JUL-09		
GMM1	✓	68500319	1.02	EXPIRES 14-OCT-09		
GPS1	✓	48400000	3.01	Copyright 2009 Aircraft Owners and Pilots Assn		
GPS2	✓	48400001	3.01	CHART - BOTTOM CARD		
GRS1	✓		2.02d	CHART FliteCharts		
GS1	✓	47500593	2.01	REGION US		
GS2	✓	47500607	2.01	CYCLE 0905		
GSA PTOH CTL	✓	AB0062149	2.3	EFFECTIVE 07-MAY-09		
				EXPIRES 04-JUN-09		
				DISABLES 01-DEC-09		
				Copyright 2009 Garmin Ltd. or its subsidiaries		
LRU ARFRM MFD1 DB				ANN TEST SYNC DBS		

Display Database
Selection Softkey

AUX-System Status Page

The Display Database Selection Softkey is used to place the cursor in the Database Window. Upon first press of the Display Database Selection Softkey, the softkey will change to a selected state (black text on gray background) and the cursor will appear in the Database Window. At this point the user can scroll through all databases in the Database Window to view status information. If the Display Database Selection Softkey is pressed repeatedly, the softkey will switch between PFD1, PFD2, and MFD1. Database status information in the Database Window will reflect the database of the selected PFD or MFD.



Display Database Selection Softkey

Garmin Databases

The following databases are stored on Supplemental Data Cards provided by Garmin:

- Expanded basemap
- Terrain
- Airport terrain
- Obstacle
- SafeTaxi
- FliteCharts
- Airport Directory (AOPA)

After subscribing to the desired database product updates, these updated databases are copied to each Supplemental Data Card for each display (the card that contains the FliteCharts or ChartView database resides in the MFD). Since these databases are not stored internally in the displays, these Supplemental Data Cards must remain in the bottom card slot of each display.



NOTE: The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.

Obtaining Garmin Database Updates

The Garmin database updates can be obtained by following the instructions detailed in the ‘Aviation Databases’ section of the Garmin website (fly.garmin.com). Once the updated files have been downloaded from the website, a PC equipped with an appropriate SD card reader is used to unpack and copy the new databases onto the appropriate Supplemental Data Cards. Equipment required to perform the update is as follows:

- Windows-compatible PC computer (Windows 2000 or XP recommended)
- SD Card Reader: SanDisk SDDR-93, SanDisk SDDR-99, Verbatim #96504, or equivalent
- Updated database obtained from the Garmin website
- Existing Supplemental Database SD Card (010-00330-41, -42, or -43) from the MFD. The supplemental data card from the MFD should be used because all databases (except the active navigation database) are required to reside on this card.

Jeppesen Databases



NOTE: The Jeppesen aviation navigation database is now referred to as the 'navigation database'. Previously this database had been referred to as the 'aviation database'.

The ChartView database should be copied to the Supplemental Data Card which will reside in the bottom card slot on the MFD. The navigation database is loaded from the Jeppesen or user supplied SD data card. Contact Jeppesen (www.jeppesen.com) for subscription and update information.

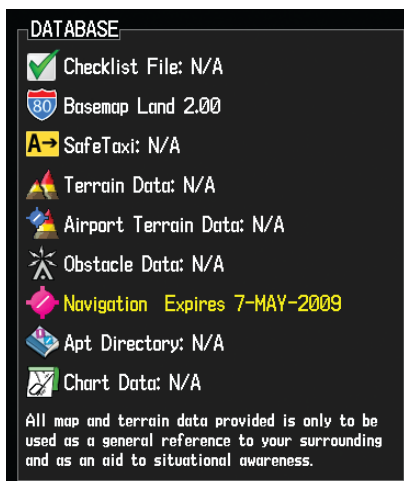
The navigation database is loaded from an SD card inserted into the top card slot of each displayed. The database is copied from the SD card in the top card slot to the display's internal memory.

Loading Updated Databases

In some cases it may be necessary to obtain an unlock code from Garmin in order to make the database product functional. It may also be necessary to have the system configured by a Garmin authorized service facility in order to use some database features.

Loading the Garmin database updates:

- 1) With system power OFF, remove the MFD database card from the bottom card slot of the MFD.
- 2) Update the Garmin databases on the MFD card.
- 3) Insert the MFD database card into the bottom card slot of the MFD.
- 4) Apply power to the system, check that the databases are initialized and displayed on the power-up screen. When updating the terrain and FliteCharts databases, a 'Verifying' message may be seen. If this message is present, wait for the system to finish loading before proceeding to step 5.



Database Information on the Power-up Screen

- 5) Acknowledge the Power-up Page agreement by pressing the **ENT** Key or the right most softkey.
- 6) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
- 7) Turn the small **FMS** Knob to select the System Status Page.
- 8) Make sure the **SYNC DBS** Softkey is in the enabled state.
- 9) Monitor the Sync Status in the Database Window. Wait for all databases to complete syncing, indicated by 'Complete' being displayed.
- 10) Remove and reapply power to the system.
- 11) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
- 12) Turn the small **FMS** Knob to select the System Status Page.
- 13) Press the Display Database Selection Softkey to show database information for each display (**MFD1 DB, PFD1 DB, PFD2 DB**). Verify the correct database cycle information is shown for each database for each display.

Canceling an automatic database synchronization:

- 1) While synchronization is in progress, press the **SYNC DBS** Softkey to disable automatic database synchronization.
- 2) Acknowledge the cancelation by pressing the **ENT** Key.

Loading the Jeppesen navigation database:



NOTE: Loading the Jeppesen navigation database prior to its effective date will result in the expiration date on the power-up screen and the effective date on the AUX-System Status Page being displayed in yellow.

- 1) Copy the new navigation database to an SD card obtained from Garmin, or the aircraft manufacturer.
- 2) With the G1000 system OFF, insert the SD card containing the new navigation database version into the top card slot of the MFD (label of SD card facing left).
- 3) Turn the G1000 system ON. A prompt similar to the following illustration is displayed:

```
DO YOU WANT TO UPDATE THE ACTIVE NAVIGATION DATABASE?
SELECTING YES WILL OVERWRITE THE ACTIVE NAVIGATION DATABASE.
FROM TO
REGION: WORLDWIDE WORLDWIDE
CYCLE: 0912 0913
EFFECTIVE: 19-NOV-2009 17-DEC-2009
EXPIRES: 17-DEC-2009 14-JAN-2010
NO WILL BE ASSUMED IN 28 SECONDS.
UPDATING NAVIGATION DATABASE, PLEASE WAIT.
```

Navigation Database Load Prompt

- 4) Press the **YES** Softkey to update the navigation database in the MFD.
- 5) After the update completes, the display starts in normal mode.
- 6) Turn the G1000 system OFF and remove the SD card from the top card slot.
- 7) Repeat steps 2 through 6 for PFD1.
- 8) Repeat steps 2 through 6 for PFD2.
- 9) Apply power to the system and press the **ENT** Key to acknowledge the startup screen.
- 10) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
- 11) Turn the small **FMS** Knob to select the System Status Page.
- 12) Press the Display Database Selection Softkey to show navigation database information for each display (**MFD1 DB**, **PFD1 DB**, **PFD2 DB**).

MFD1 DATABASE	
NAVIGATION - INTERNAL	
REGION	WORLDWIDE
CYCLE	0913
EFFECTIVE	17-DEC-09
EXPIRES	14-JAN-10
Copyright 2009. Jeppesen Sanderson, Inc.	
BASEMAP - BOTTOM CARD	
REGION	WORLDWIDE
VERSION	3.00
GARMIN LTD. AND ITS SUBSIDIARIES 2008	
SAFETAXI - BOTTOM CARD	
REGION	US
VERSION	2.25

Check Database Cycle Number (MFD shown)

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page

A

Activate a flight plan 20
 Active Channel 61
 ADF 12
 ADS-B 102
 Advisory alerts 69
 AHSR 87, 88, 89, 91, 92
 Airport Signs 55, 56
 Airways 104
 Air Data Computer 70
 Alert messages 90
 ALT 45
 Altimeter setting 1
 Altitude mode 45
 Altitude volume 45
 Antenna stabilization 53
 Antenna tilt 51
 AOPA's Airport Directory 58
 AP 76
 Attitude & Heading Reference System 70
 Audio Panel 65
 Audio panel controls
 NAV1, NAV2 12
 Autopilot 76

B

Barometric Altitude Minimums 3
 Barometric pressure 100
 Bearing line 51, 52

C

CDI 1, 2, 12, 94
 Cell 41, 42
 Cell mode 42
 Channel Presets 63
 ChartView 56, 57
 Clearance player 14

Clearance Recorder 14
 Code selection softkeys 11
 COM 12, 65

D

Databases 106
 Database synchronization 109
 Database updates 106, 107, 108
 DCLTR Softkey 57
 Dead Reckoning 67
 Declutter 105
 Declutter 66, 97
 Designated altitudes 22
 Direct-to 19
 DME 11, 12
 DR mode 67, 68

E

Edit a flight plan 34
 Engine display 5
 Engine Stage Rotation Speeds 7

F

FD 76
 Flight Director 15
 Flight ID 11
 Flight path marker 55
 FliteCharts® 56, 57
 Frequency Transfer 12

G

Gain 52

H

HF 12
 Horizon heading 55
 Horizontal scan 51

I

Inhibit 49
Inhibit TAWS 49
Inset Map 97, 98
Intercom isolation 13
IOI 71, 74
Iridium 59, 60, 61

J

Jeppesen 57

L

Lightning 41, 42

M

Map panning 43
Message advisories 78–89, 9–96
MET 76
METAR 43
Minimums 75
MISCOMP 69, 70
Mistrim 76
Mode S 101
Mode selection softkeys 11
Multi Function Display (MFD)
Softkeys 103

N

N2 Display 8
NAV 12
NAV1 2, 12
NAV2 2, 12
Navigation database 21, 22, 77, 79,
82, 93
Network 59, 61
NEXRAD 43, 44, 98, 105

O

OBS 2
Obstacles 82, 84
Outside Air Temperature (OAT) 7
Overspeed Protection 16

P

Pathways 55, 56
PIT 70

R

Reversionary mode 65
ROC 71, 74

S

SafeTaxi® 55, 56
Sector scan 52
Secure Digital (SD) cards 106
Sensor 70
STAB 53
Standby 50
Store Flight Plan 34
Stormscope lightning data 41, 42
Strike 41
Strike mode 42
Supplemental Data Card 107, 108
SVS 55, 96
Synthetic Vision System 55

T

TAF 43
TAS 45, 46, 87
TAWS 46, 47, 48, 49, 50, 71, 72, 74
TAWS-A 46, 47, 48, 71, 72, 73, 74, 98
TAWS-B 46, 48
Telephone 59
Temperature, Outside Air (OAT) 7

Terrain 46, 48, 71, 72, 82, 98, 104
 Thrust rating 8
 Tilt line 51
 Timer 2, 93
 Topographical data 98, 104
 Traffic 41, 45, 104
 Traffic advisory 45
 Traffic Advisory 44
 Traffic map page 45, 46
 Transponder 11, 101, 102

V

Vertical speed guidance 22
 Vertical track 75
 VNV 19, 66, 95
 Vspeed 2

W

WAAS 84
 WATCH® 53
 Waypoint Selection Submenu 30
 Weather Attenuated Color Highlight 53
 Weather data link page 43
 Weather radar 50
 Wind data 100

X

XM lightning 98, 105
 XM weather 43
 XPDR Softkey 11

Flight Instruments
EIS
Nav/Com/XPDR/Audio
AFCs
GPS Nav
Flight Planning
Procedures
Hazard Avoidance
Additional Features
Abnormal Operation
Annun/Alerts
Appendix
Index

Blank Page



GARMIN

Garmin International, Inc.
1200 East 151st Street
Olathe, KS 66062, U.S.A.
p: 913.397.8200 f: 913.397.8282

Garmin AT, Inc.
2345 Turner Road SE
Salem, OR 97302, U.S.A.
p: 503.391.3411 f: 503.364.2138

Garmin (Europe) Ltd
Liberty House, Bulls Copse Road
Hounsdown Business Park
Southampton, SO40 9RB, U.K.
p: 44/0870.8501241 f: 44/0870.8501251

Garmin Corporation
No. 68, Jangshu 2nd Road
Shijr, Taipei County, Taiwan
p: 886/2.2642.9199 f: 886/2.2642.9099

www.garmin.com